

# THE AUTOMOBILE

AUTO SHOW  
FEB. 18-25

## Brooklyn's Beautiful Show

First Automobile Display  
Opens in Scene of Rare  
Artistic Loveliness at Twenty-third Regiment Armory

**B**ROOKLYN'S first automobile show opened Saturday night at the Twenty-third Regiment Armory with a big crowd present to inspect a very complete line of standard cars. The decorative scheme used in this event is by far the most artistic and effective seen in the East this year and probably sets a new mark for this feature of automobile shows in the country.

It is not overdone and still no spectator can view the whole scene without being conscious of its wonderful beauty.



DRILL HALL OF THE TWENTY-THIRD REGIMENT, N. G. N. Y. ARMORY, OF BROOKLYN, PRESENTING THE FINEST DISPLAY OF AUTOMOBILES THAT WAS EVER EXHIBITED, IN THE LARGEST AUDITORIUM IN THE UNITED STATES

The armory is one of the largest unbroken floor spaces in the world, being approximately 200 by 300 feet, or a plane surface of 60,000 square feet without a pillar to obstruct the view or free movement. The floor is divided by five main aisles and three transverse passages, cutting up the space into eight big blocks with exhibits of cars and accessories ranged around the four walls. All told there are 116 exhibition spaces, each of which contains some certain thing identified with motoring. The divisions for the exhibits are made in pergola effect with white

pillars and greenery and lighted with rows of soft burning colored lamps. Two lines of these lamps are delicate rose pink and two are of primrose yellow. While the combination might seem to be a bit startling, the lamp globes are slightly opaque and deeply shaded so that the contrast is not unsightly, in fact the opposite is the case. The hall is surrounded by a gallery for those who wish to rest and see the show.

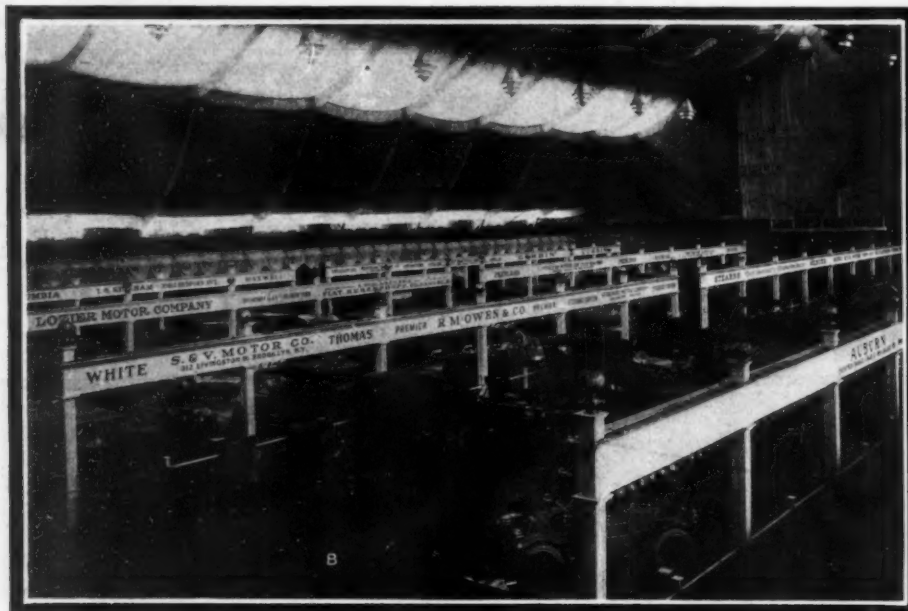
A canopy of white covers the whole ceiling, from which depend twenty-five huge chandeliers bearing a myriad of silver

white lights. The whole effect is harmonious, almost melodious, in its ensemble.

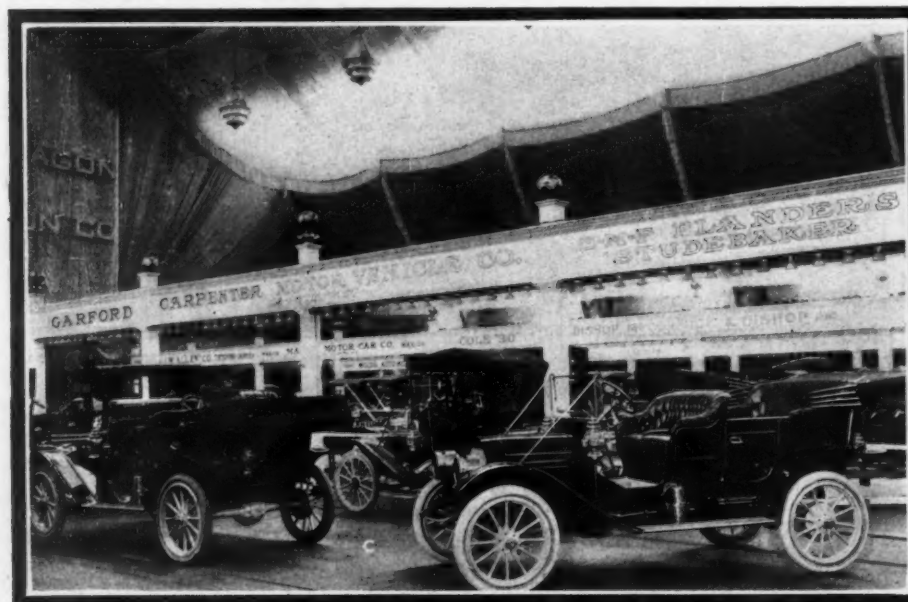
So well balanced are the decorations that the drill-floor, vast as it is, loses the impression of size and the 56 exhibitors that are displaying cars in the eight main blocks all have an excellent opportunity to show their wares. Those on the sides and ends of the hall are not overshadowed by their neighbors and everybody seemed satisfied. The details have been carried out with fidelity according to preconceived plans of the management. The Brooklyn Motor Vehicle Dealers' Association received numerous congratulations on the success of the affair from all points of view and motor enthusiasm has been greatly accentuated by the notable triumph achieved.

The armory is somewhat isolated and the weather Saturday night was not quite ideal for automobiling and so the throngs of visitors traveled to and from the show in the street cars to a large extent. The lines of waiting automobiles were not so noticeable as they have been at some of the other exhibitions this season, on account of the conditions mentioned.

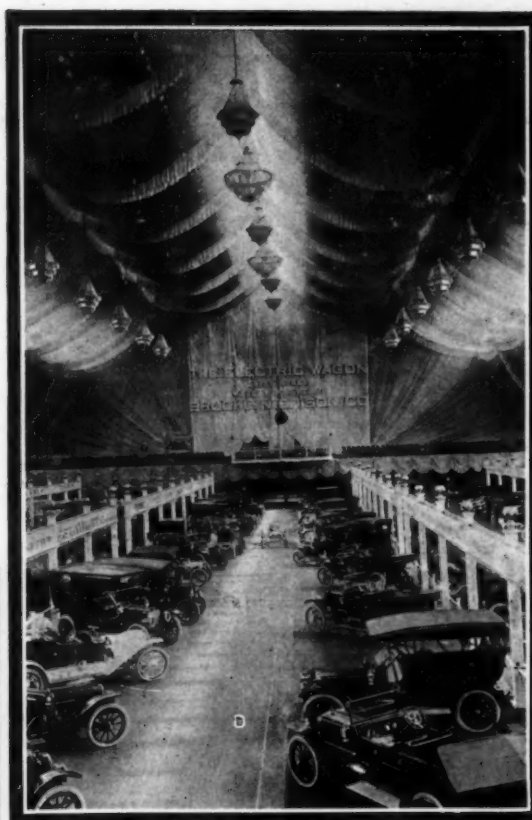
It is estimated that about 10,000 persons attended the opening, although no figures were given out. The wide aisles were comfortably filled from the first hour of the session and each exhibition space was given more than passing attention until the hour for closing. Those who attended were no strangers to the automobile and their inquiries showed that they were seeking information. It is an acknowledged fact that every resi-



Looking across the Armory toward the main entrance—White, Thomas, Premier, Stoddard-Dayton, Lozier, Columbia, Maxwell and Stearns displays in the foreground



Where the Garford, E-M-F, Flanders and Studebaker are shown, with the Marion, Cole "30," and Overland in the background



Looking along the center aisle toward the main entrance

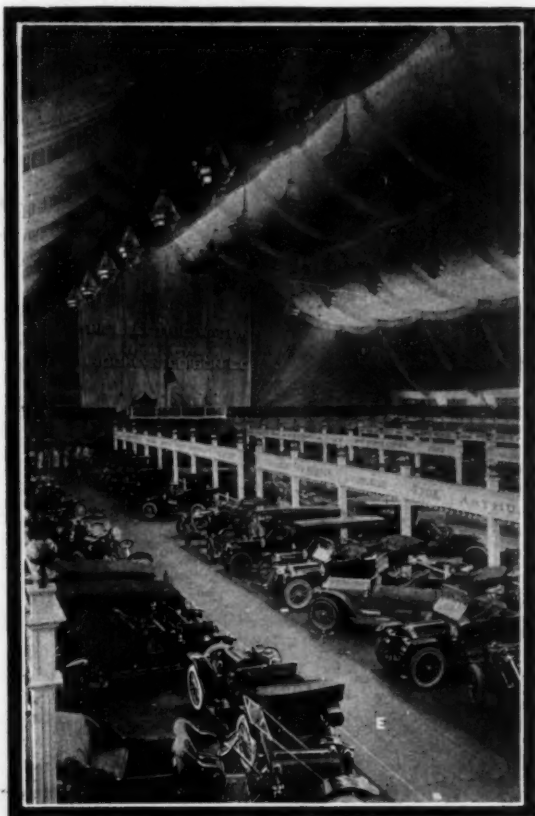
dent of Long Island from Seagate to Montauk Point is the owner of at least one automobile—or at least those who do not own a car now are preparing to buy one or thinking about it seriously. Long Island has many fine roads and a few that are not so fine and some that are trying to man and machine, but in the main it can be said without chance of contradiction that on the general average the roads of Long Island are better than those of any similar area in the United States.

Thus the residents of Long Island actually own a most important part of the automobile, in that they have the roads upon which the cars may be operated with a maximum of enjoyment and utility and a minimum of discomfort. As to the cars, Long Islanders are sufficiently interested to make that territory the Paradise for automobile salesmen.

Throughout the island the tendency is strongly toward a condition that will eventually mean one big community. Already the towns and cities are connected by smooth highways, along which prosperous farms, truck-gardens and the villas of the wealthy are ranged in unbroken array.

Without doubt, the current season will prove by far the best ever enjoyed by the Brooklyn automobile dealers, including those in Manhattan who make a special effort to cater to the trade of that section, and the present show has for its chief object the information of the buy-





One of the side aisles, with Locomobile and Knox displays in the foreground

ing public on the main points of all the standard automobiles.

There are numerous New York concerns represented in the show, these being mostly branches whose territory includes Manhattan and Long Island and whose eastern headquarters are located on this side of the East river.

There are thousands of urban residents of wealth and social prominence who have both summer and winter homes on Long Island. This class without exception owns automobiles, generally luxurious limousines for bad weather and powerful touring cars for good, and fast runabouts for sport, but the citizen of moderate means is also a motorist on Long Island and owns appropriately priced cars, while the amateur and professional chicken farmer and truck-gardener has learned that at least one small car that combines qualities for business and pleasure is a necessity.

Each of these three classes was strongly represented at the show Saturday night and the sight of a note book and pencil in the hands of prospective investors was quite common for a first night. Perhaps the most pressing inquiry developed was that of the man who wanted to find out the kind of car that would be serviceable to him in city and country travel and that also could be used for hauling produce from his farm to market and deliver merchandise to the farm from the city markets. He had all the fervor of the purchaser of a car for pure

passenger service and all the interest of the business man in providing equipment for his establishment.

This class of patronage has long been recognized by the dealers who do business on the island and as a result there are a number of body types on display at the show that have been designed to meet this demand.

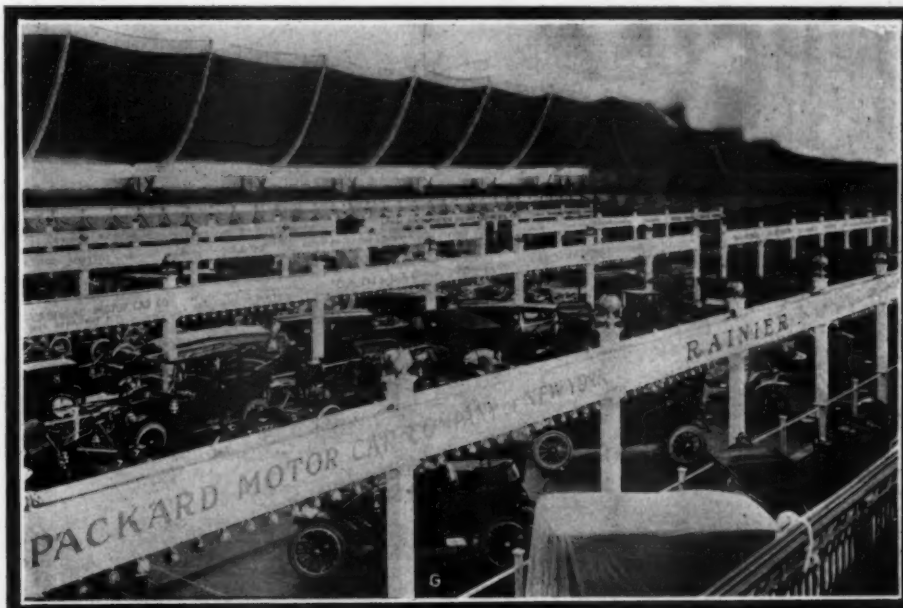
The exhibits include sixty makes of gasoline automobiles, including four that show trucks and delivery wagons exclusively. Several of the concerns that are displaying pleasure cars also show a truck type or two. Several foreign makers are in the show with a model or two, but the atmosphere is American through and through. Among the high-class cars of domestic manufacture there is scarcely an absentee, but the cheaper cars are not

so completely represented. That Spring is on its way is indicated by the number of open bodies shown, despite the fact that limousine types are freely exhibited in the spaces where the cars of high price and class are displayed. The center aisle of the Brooklyn show compares favorably with Madison Square Garden as regards class and style of exhibits and there were those in attendance Saturday night who declared that the settings and decorations bore the same comparison to that section of the 1911 show at the Garden that poetry does to prose.

Electrics are not much in evidence, the show being known as a gasoline exhibition. The Brooklyn Edison Company, however, has a striking display in a huge sign that is placed across one end of the armory above the band stand, advertising



Looking diagonally across the Armory—Marmon, National, Mercer, Stearns, Peerless and Chalmers displays in the foreground



Packard in foreground, flanked by Rainier, with Cadillac, Cole "30," Garford, Locomobile, Overland and other well-known makes of cars in the galaxy

ing the saving qualities of the electric wagon.

There are 41 concerns showing complete cars of various kinds and 22 showing accessories and wares that are not so intimately connected with motordom.

There is nothing new at the show, in the sense that it has never been shown before, but the Ford line makes its bow in the metropolis at Brooklyn.

The list of exhibitors, with the cars shown, is as follows:

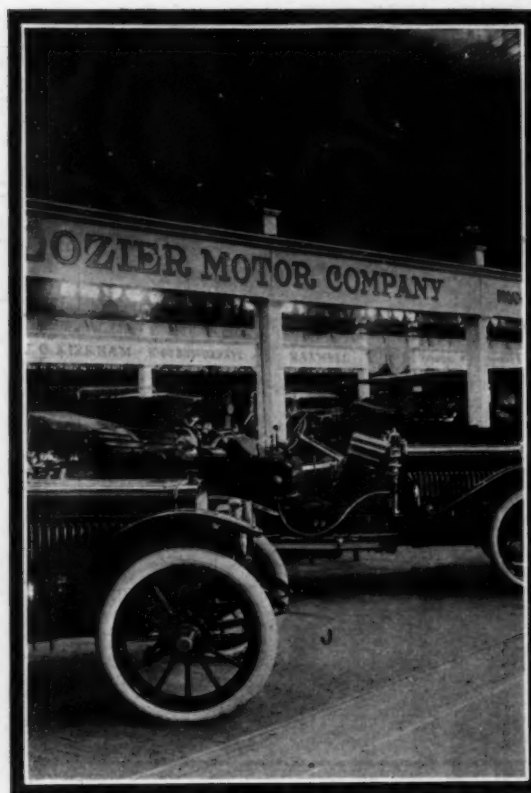


Bishop, McCormick & Bishop, Inc., with the Ford at the right, showing the Croxton at the left rear, Bonner Auto Company just at the back, flanked by Overland, and Mitchell

Some of the spaces contain several makes of automobiles.

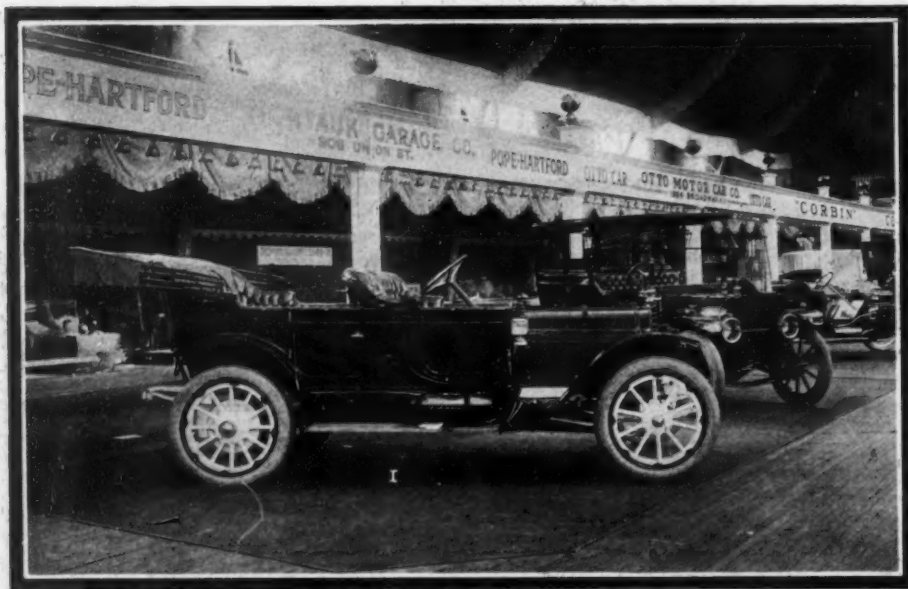
Music for the opening night was furnished by the full band of the Twenty-third Regiment under the direction of Thomas F. Shannon, but beginning with

Autocar, M. J. Wolfe.  
Hupmobile, M. J. Wolfe.  
Colby, Empire City Automobile Company.  
Paige-Detroit, Empire City Automobile Company.  
Rainier, Rainier Motor Company.  
Packard, Packard Motor Company.  
Corbin, Corbin Motor Vehicle Company.  
Otto, Otto Motor Car Company.  
Pope-Hartford, Montauk Garage.



A glance at the Lozier at close range, with I. C. Kirkham, with Maxwell not far away

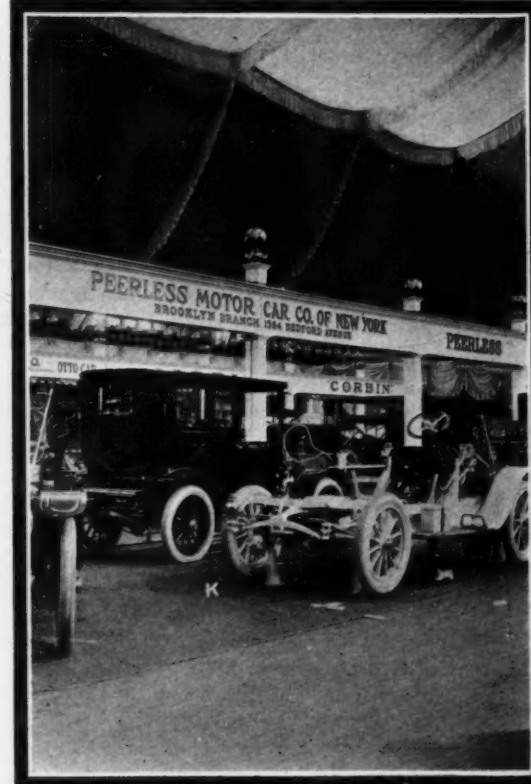
Flanders, Carpenter Motor Vehicle Co.  
Cadillac, Detroit Cadillac Motor Co.  
Hudson, Bruns Automobile Company.  
Chalmers, Bruns Automobile Company.  
Peerless, Peerless Motor Car Company.  
Flat, A. W. Blanchard, Inc.  
Oldsmobile, A. W. Blanchard, Inc.  
Herreshoff, A. W. Blanchard, Inc.  
Lozier, Lozier Motor Company.



Montauk Garage Company, with the Pope-Hartford, with Otto adjoining, followed by Corbin in a fine setting

Monday night the Fadettes of Boston, a feminine orchestra under the baton of Caroline B. Nichols, took possession of the handsome band stand and gave two concerts a day—one each afternoon and evening.

Renault, Montauk Garage.  
Maxwell, I. C. Kirkham.  
Columbia, I. C. Kirkham.  
Kissel Kar, Kissel Kar Co.  
Knox, Arthur R. Townsend.  
Locomobile, I. S. Remson Mfg. Co.  
Garford, Carpenter Motor Vehicle Co.  
Studebaker, Carpenter Motor Vehicle Company.  
E-M-F, Carpenter Motor Vehicle Co.



Peerless in the foreground, with Corbin and Otto making a conspicuous background





Stoddard-Dayton making the front scene, with Premier, KisselKar, Columbia and others bringing up the rear

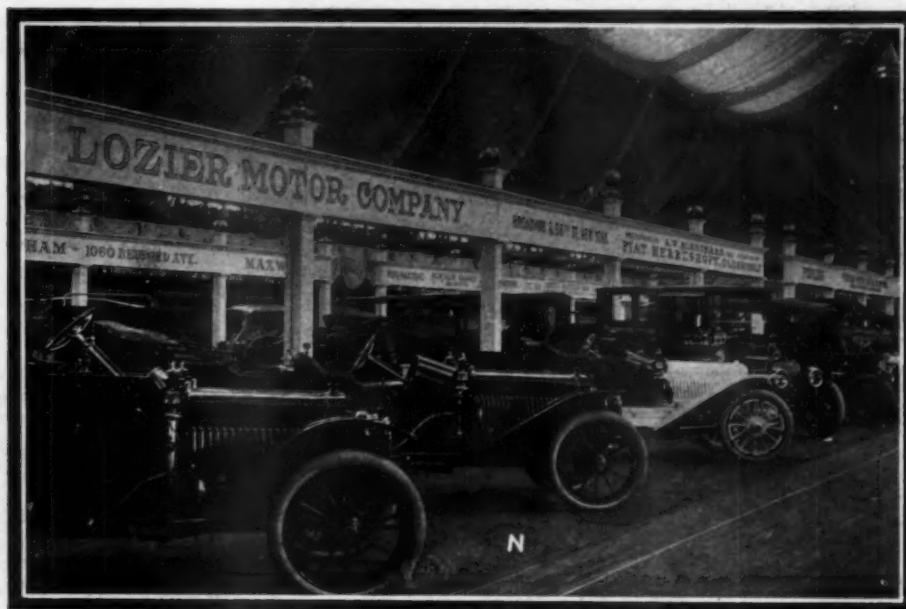
Winton, Carlson Automobile Company.  
Halladay, Grant Square Automobile Co.  
Ford, Bishop, McCormick & Bishop.  
Cole, Bishop, McCormick & Bishop.  
Marion, Marion Motor Car Company.  
Stevens-Duryea, I. M. Allen Company.  
Buick, Buick Motor Company.

Stearns, Peerless Garage and Sales Co.  
Mercer, Peerless Garage and Sales Co.  
Stoddard-Dayton, Stoddard Motor Company.  
Premier, R. M. Owen and Company.  
White, S. and V. Motor Company.  
Thomas, S. and V. Motor Company.  
Franklin, Franklin Automobile Company.  
Reo, Joseph D. Rourk.  
Haynes, Joseph D. Rourk.

Metallurgique, I. M. Allen Company.  
Victor truck, Bruns Automobile Company.  
Knox truck, Arthur R. Townsend.

The accessory exhibitors include the following companies:

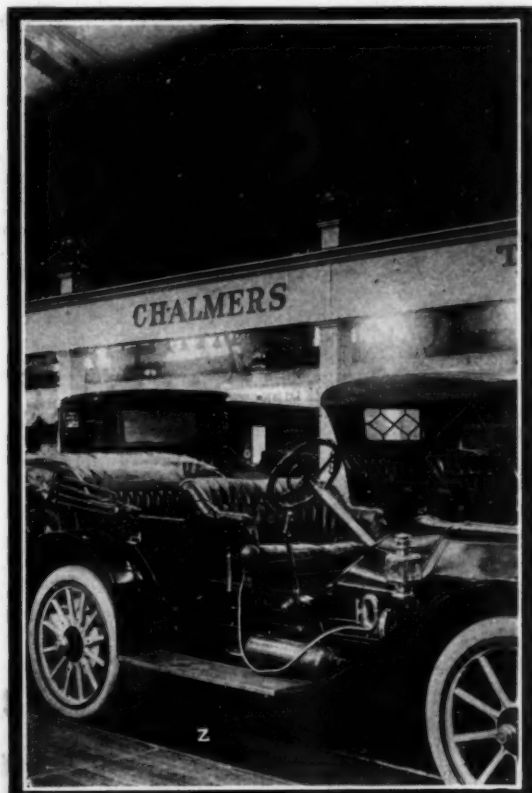
P. M. Marko & Company.  
Pastre's Automobile Garage.  
Welch Grape Juice.



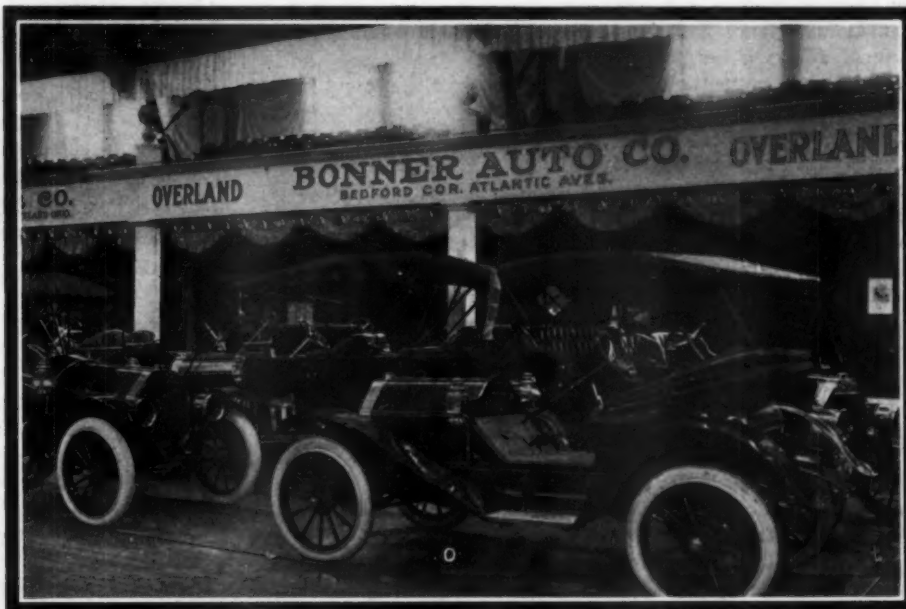
Glancing across the big show floor, with Lozier in the front and Fiat at the right, showing other notable cars, as the Maxwell, a little to the back

Mitchell, Mitchell Motor Company of New York.  
Overland, Bonner Automobile Company.  
Croton, Croton Motor Company.  
Oakland, Woods Automobile Company.  
Marmon, Sterling Place Garage and Sales Company.  
National, Poertner Motor Car Company.  
Crawford, Prospect Park South Garage.  
Case, W. C., and H. N. Allen.

Regenbald & Stanley.  
Regina Vacuum Cleaner.  
Schaap Automobile Company.  
Reliance Ball Bearing Door-hanger Company.  
Coney Island Automobile Club.  
Ryder-Driggs Company.  
J. Alexander Manufacturing Company.  
Monarch Vacuum Cleaner.  
Newmastic Tire Company.



A close look at the Chalmers with the Otto just showing over the way



Overland, shown by the Bonner Auto Company, brought into bold relief by a setting in numerous cars of this make, forming a complete line

Allen-Kingston, W. C., and H. N. Allen.  
Auburn, Enterprise Garage and Sales Company.  
White Truck, S. and V. Motor Company.  
Kelly Truck, Motor Engineering and Sales Company.  
Beyster-Detroit, Farrell Automobile Company.  
Cass, Farrell Automobile Company.  
G. J. G., G. J. G. Motor Car Company.

Julius Bindrim.  
A. H. Patterson.  
Y. M. C. A. Auto School.  
The Carwalt Company.  
Keen Starter Company.  
Brooklyn Auto Top Co.  
H. Duhamel & Sons.  
Martin Evans Company.  
Fred'k Loeser and Co.



General view of the First Regiment Armory, N. G. N. J., looking towards the entrance

**N**EWARK, N. J., Feb. 20—Promptly on the stroke of eight last Saturday night, as thousands of electric bulbs flashed into brilliance, Senator Walter Edge, into whose keeping the welfare of the motorists of the Garden State has been placed, officially declared open Newark's Fourth Annual Automobile Show.

As befits New Jersey's metropolis, the exhibition, for the success of which the management has labored early and late for the past six months, far outclasses any previous effort, and as regards importance and the number of cars exhibited runs the national affairs a very close second.

The First Regiment Armory, which houses the present show, boasts nearly 40,000 square feet of main floor space, notwithstanding which the committee in charge has been compelled to adjust and reapportion here and there to accommodate the numerous applicants for space. Among the 100 exhibitors are 54 firms showing 172 complete cars, pleasure and commercial, no less than 62 separate makes of automobiles being represented. Added to these are nearly half a hundred exhibits of various parts and accessories, which through the lack of main floor space have been relegated to the capacious gallery which stretches around all four sides of the big Armory.

The show is being run by the New Jersey Automobile Exhibition Co. (a combination of the New Jersey Automobile Trade Association and the New Jersey Automobile and Motor Club), of which George Paddock is president; Dr. James R. English, vice-president, and H. A. Bonnell, secretary-treasurer, the last-named being also general manager of the show, with E. E. Pearce as assistant.

Blue-and-white is the color scheme, and there is a commendable absence of the over-decoration which frequently mars the attempts to beautify the plain interiors of the huge buildings that must perforce be used for such imposing ventures. Around the balconies and upon the walls this effective color combination is used to hide the plainness which features the interior of the home of New Jersey's "Dandy First," while the entire massive roof construction is effectively screened by a continuous bunting foil of cerulean hue.

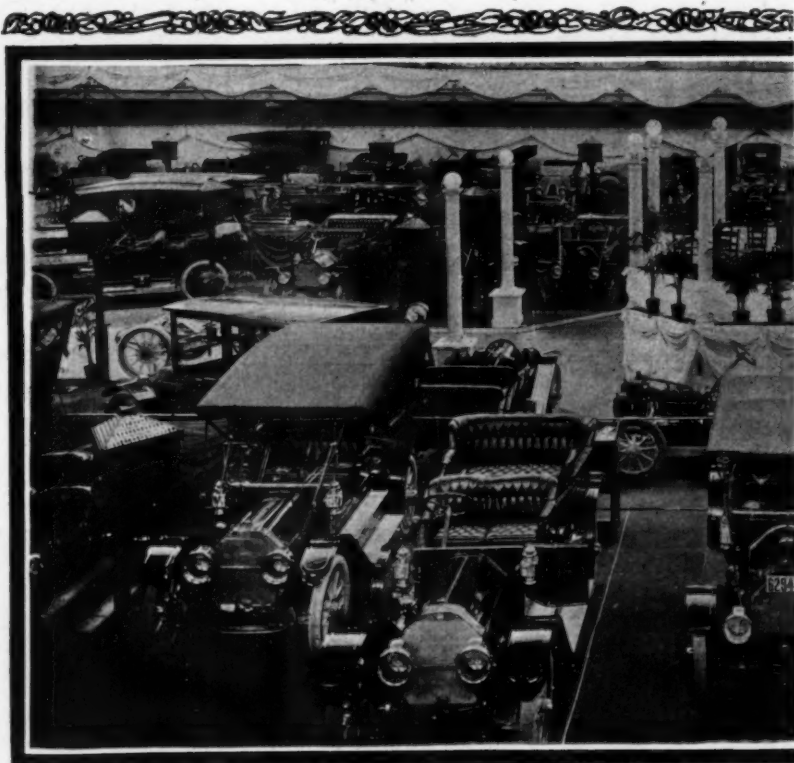
The car exhibits on the main floor are marked by huge triangular electric Mission lamps, on the faces of which are inscribed the names of the cars and those of the exhibiting firm.

## Newark's Annual Show

### SOME STATISTICS CONCERNING NEWARK'S

*It is being held in the Armory of the First Regiment, N. G. N. J., the largest exhibition building in New Jersey, the drill room having an area of about 40,000 square feet.*

*There are 100 exhibitors. Sixty-four separate makes of cars are represented. There are 175 complete cars and chassis on exhibition, according to conservative estimates, valued at upward of half a million dollars.*



LOOKING ACROSS THE ARMORY WITH THE BAND

Along the center aisles these lamps are supported on triangular carved uprights, while underneath the galleries they are suspended from chains. The effect, especially when reinforced by the numerous festoons of electric lamps and the three huge electric chandeliers which are suspended from the roof, is beautiful. White pillars along the middle aisle and around the band stand in the exact center of the building, each pillar surmounted by a powerful electric lamp, carry out the general decorative scheme to a nicety.

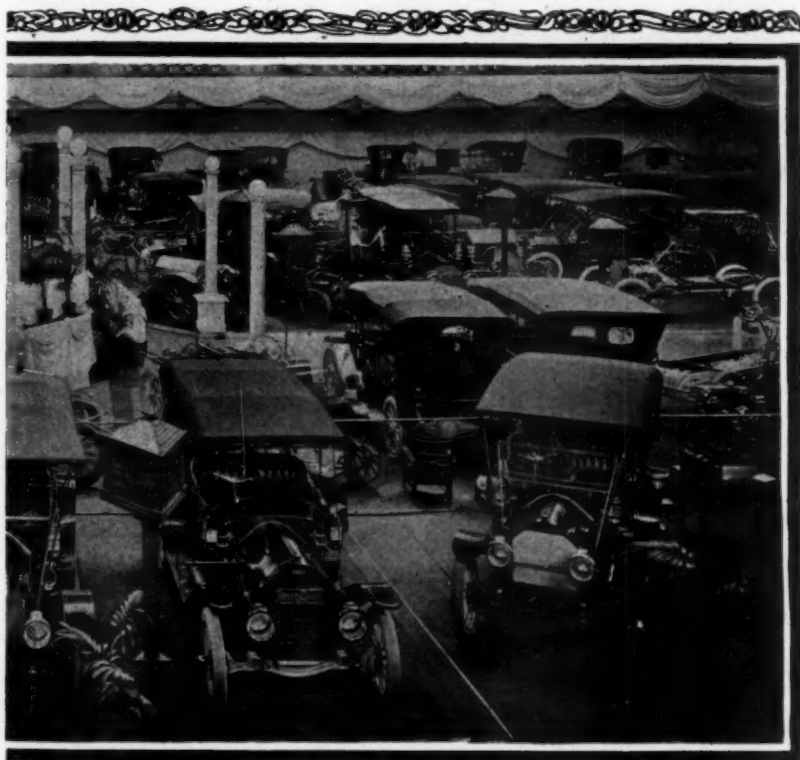
At the far end of the block-long Armory the commercial contingent hold forth. A dozen separate makes of business vehicles of various capacities and for all sorts of work are displayed, including examples of the Alco, Rapid, Veerac, Atterbury, Reo, Peerless, Packard, Morgan, Grabowsky, Mack, Silent Johnson and Autocar wagons. The presence of these big fellows cost the promoters a pretty penny, for it resulted in an order from the Armory authorities that a special flooring must be laid over the expensive permanent floor in order to insure the latter against damage. This was later modified to the extent that the aisles were excepted from the ruling. When Senator



FOURTH ANNUAL EXHIBITION OF AUTOMOBILES IN THE NEW JERSEY METROPOLIS PROMISES TO BE OF STATE-WIDE IMPORTANCE

#### FOURTH ANNUAL AUTOMOBILE SHOW

Newark, the metropolis of New Jersey, is the automobile center of the northern half of the State. The experience of former years warrants the prediction that the present show will be attended by fully 1,100 dealers—branch managers, agents, garage and repairmen—the Newark exhibition being the occasion of the annual round-up of the motorwise of all the territory north of Trenton.



STAND IN THE DISTANCE AND A SEA OF AUTOMOBILES

Edge was escorted to the band stand at 8 o'clock by Joseph H. Wood, president of the Associated Automobile Clubs of New Jersey, and George Blakeslee, president of the New Jersey Automobile Trade Association, there were fully 10,000 visitors present. The Senator, in his usual modest way, compared the show with those held at New York and Chicago, and declared that with its \$500,000 worth of exhibits it deserved to rank next to those in importance. "Such a display," he declared, "indicates an industry of a magnitude that will certainly justify the State in taking a more liberal attitude toward automobile legislation. A State that can produce such an exhibit cannot afford to antagonize such an industry as is here represented. The automobile is now recognized as a means to an end, an agent of civilization and a necessity, and it is not proper that we should lay a tax upon reasonable interstate touring by this means, simply because it is new and less familiar than the older means of transportation, which remain unmolested." The Senator in the course of his remarks took occasion to decry the attitude of the Legislature in opposing equitable remedial measures, and was strong in the belief that New Jersey was



View along the north aisle of the armory, bringing into view the gallery and the accessories exhibited therein

hospitable at heart, and should not forget her bringing-up in the matter of dealing with automobilists from beyond her borders.

Among the more comprehensive exhibits, that of the Ellis Motor Car Co., local agents for the Pierce-Arrow, is notable. It includes, besides a brilliantly polished 48-horsepower, six-cylinder chassis, the suburban and touring car, both 48's, and a trio of 36's, including a touring car, a brougham and a miniature tonneau. The exhibit of J. W. Mason, who handles the Maxwell and Columbia here, is similarly complete. Besides the Baby Maxwell, all the other Maxwell models and a fine showing of Columbias is made. The F. L. C. Martin Auto Co.'s display of Alco and Mitchell pleasure cars, not to mention the same firm's showing of Alco and Rapid business vehicles in the commercial section, is likewise notable. Other concerns which are represented in both the pleasure and commercial vehicle sections are R. M. Owen & Co., Reo; Autocar Sales Co., Autocar; Peerless Motor Car Co., Peerless; and the Packard Motor Car Co., Packard.

Newark boasts the only woman automobile dealer in the State in the person of Mrs. M. L. Rickey, local agent for the Marmon, who has made that car one of the best selling propositions in this vicinity. She is in charge of the Rickey Machine Company's exhibit, just athwart the band stand, and can demonstrate the good points of her car with the best of her masculine opponents.

The countrywide fame of J. M. Quinby & Co., a Newark concern whose bodies surmount the chassis of many high-grade American cars, is borne out by their exhibit, which includes the Simplex, Isotta and S. G. V. cars. The many trophies accumulated by National cars on road and track in the past are exhibited at the stand of the Weldon & Bauer Co., which handles that car in this territory.

The Thomas that won the round-the-world race is prominent in the exhibit of the E. R. Thomas Motor Branch Co., while the two-time Vanderbilt winner attracts crowds to the stand of the F. L. C. Martin Auto Co., Alco representatives in Newark and vicinity. The 1910 Glidden trophy shone resplendent at the Paddock-Zusi Co.'s stand, where the complete Chalmers line was installed.

Cut-out chassis, driven by electricity, are unusually numerous, electric lights being installed in the "innards" of the motors in

most instances to better bring out the many excellences of design apparent in the 1911 models of the exhibiting firms. As a business proposition the Newark show has always been pre-eminent. The automobile dealers and owners of North Jersey annually gather here to complete their plans for the following season. The business done cannot be adequately reckoned by the number of actual sales, large as these usually are. Numerous up-State agencies and sub-agencies are closed for during the annual exhibition, and the clans are already gathering here for the week of business that is to come.



Looking across the armory from the Northeast corner; freight automobiles shown under the West gallery

The committees which are looking after the details are as follows: Space, George Paddock, J. W. Mason, W. H. Ellis, G. H. Smith, F. L. C. Martin; Finance, R. A. Greene, W. H. Ellis, I. M. Upperco; Press, Program and Advertising, H. A. Bonnell, J. W. Mason, L. B. Zusi, Norris W. Brown; Decorations, R. A. Greene, L. B. Zusi, I. M. Upperco; Entertainment, J. H. Wood, F. A. Croselmire, R. N. Newton, D. C. Reynolds, Dr. J. R. English, C. Louis Fitzgerald.

Following is a complete list of the nearly 100 exhibitors, with the names of the cars or the character of the accessories they are showing:

#### COMPLETE CARS

B. F. Adams & Co., Bergdoll and Morgan commercials.  
Apgar & Co., Lion "40."  
Atterbury Motor Car Co., Atterbury commercials.  
Autocar Sales Co., Autocar commercials.  
Alex. Brunner, Kline-kar.  
Buick Motor Company, Buick.  
E. D. Carlough, Franklin.  
Central Motor Car Company, Regal.  
Commercial Maintenance & Motor Co., Grabowsky and Atlas commercials.  
Correja Motor Car Co., of New Jersey, Correja.  
Crescent Auto Company, Mack commercials.  
Detroit-Cadillac Motor Car Co., Cadillac.  
Wm. W. Elder, Abbott-Detroit.  
Electrical Maintenance & Repair Co., Detroit Electric.  
Ellis Motor Car Co., Pierce-Arrow.  
Flat Automobile Company, Flat.  
Hiram L. Fink, Elmore.  
Gray's Motor Car Co., Schacht.  
Greene Motor Car Co., Locomobile.  
A. J. Hague, Jr., Inter-State.  
Haynes Auto Company, Haynes.  
Johnston Auto Conveyance Co., Brush and Silent Johnson commercials.  
H. J. Koehler Sporting Goods Co., Hupmobile and Koehler "40."  
Lee Automobile Company, De Tangle.  
Linkroom Automobile Company, Winton Six.  
Lozier Motor Company, Lozier.  
F. L. C. Martin Auto Co., Alco and Mitchell pleasure cars and Alco and Rapid commercials.

J. W. Mason, Maxwell and Columbia.  
J. J. Meyer, Auburn.  
H. J. Moynihan Auto Co., Mercer.  
New Jersey Automobile Co., Inc., Moline.  
New Jersey Motor Sales Co., Regal.  
New Jersey Overland Co., Overland.  
Oldsmobile Company of New York, Oldsmobile.  
O'Neill Motor Car Co., Paterson.  
R. M. Owen & Co., Reo and Premier pleasure cars and Reo commercial.  
Packard Motor Car Co., of New York, Packard pleasure and commercial vehicles.  
Paddock-Zusi Motor Car Co., Chalmers.  
Peerless Motor Car Company of New York, Peerless pleasure and commercial vehicles.  
J. M. Quinby & Co., Simplex, Isotta and S. G. V.  
The A. Elliott Ranney Co., Hudson.  
Reynolds & Erwin, Penn "30."  
Rickey Machine Co., Marmon.  
R. G. Schultz, Torbensen.  
A. G. Spalding & Bros., Stevens-Duryea.  
Stoddard Motor Co., Stoddard-Dayton.  
Studebaker Bros. Co. of New York, Studebaker.  
E. R. Thomas Motor Branch Co., Thomas.  
Veerac Sales Company, Veerac commercials.  
The Wallace-De Wilde Co., Cole "30."  
Waring Motor Car Co., Marion.  
Weldon & Bauer Co., National.  
West Side Garage, Moon.  
The Woolston Company, Oakland.

#### ACCESSORIES

Alexander J. Ackermann, Reliable Overhead washer.  
Auto Brokers' Association, Insurance.  
Bush & MacDougall, Excelsior and Thor motor cycles.  
Chas. Byrne, Supplies.  
Col-Mac Co., Automobile, motor boat and motor cycle repairs.  
Dakota Mineral Milling Co., Slick-shine.  
The J. H. Deppeler Agency, Acetylene welding.  
D. B. Dunham & Son, Automobile bodies.  
Economy Auto Supply Co., Supplies.  
Empire State Surety Co. of New York, Insurance.  
Essex Storage Battery & Supply Co., Electrical equipment.  
C. E. Garrabrant, Pyrene fire extinguisher.  
Gilbert & Barker Mfg. Co., Gasoline pumps.  
G. O. Graves & Co., Automobile bodies.  
Hardman Tire & Rubber Co., Hardman tires.  
Watson J. Kluczek, Harley-Davidson motor cycles.  
H. J. Kochler Sporting Goods Co., Indian motor cycles.  
L. Lawrence & Co., Welding process.  
Meteor Auto Tank Co. of New York, Meteor acetylene tanks.  
Meyers Bros., Ivory novelties.  
New Jersey Auto Top Mfg. Co., Tops and wind shields.



General view of the armory from the South gallery, presenting the near-two hundred automobiles present

New Jersey Motor Equipment Co., Gasoline agitator.  
New York Auto Top & Supply Co., Tops and wind shields.  
Newark Construction Co., Concrete garages.  
National Oil & Supply Co., Viscos lubricants.  
Newark Glass Co., Keystone oils and lubricants.  
Norben Oil & Supply Co., Norbenene.  
J. Schreyer, Automobile maps.  
W. S. Sheppard, Ideal lubricants.  
Standard Oil Co., Oils and greases.  
Travelers' Insurance Co., Automobile insurance.  
Westen Mfg. Co., Westen shock absorbers.  
Wilcox Auto Co., Automobile tops.  
Louis J. Wurth, Pierce and R-S motorcycles.



## “Ancient History” Although Penned Less Than a Decade Ago, Much of the Following Makes Very Interesting Reading in the Light of Present-Day Knowledge

ONE editor said, in 1902, that “the authorities of the Yellowstone National Park evidently look upon motor vehicles as being dangerous, and upon their recommendation Secretary Hitchcock, of the Department of the Interior, has ruled to exclude them from the park.” And six or seven years later is found a similar plaint, as follows: “Are the parks for the people, or not? Incredible as it may seem, it is a fact that the great Yellowstone Park, purchased and kept out of the public money and offering, without doubt, the greatest trip in the country, is actually impassable to one of the great divisions of the people and that division is the automobile driving public.”

“The automobile has at last forced its way into politics, the Automobile Club of the 26th Assembly District having been organized in New York City, with Sheriff Thomas J. Dunn, leader of the Tammany forces, as a leader in the club,” was an announcement that made the rounds of the press about this time.

Considerable stress was laid upon the question of fuel as a necessary factor in the general up-build of the automobile industry at this period. Comment upon the development of fuel-alcohol brought forth this statement from an expert:

“The present condition of the coal market, to say nothing of the advance of the price of gas, suggests the importance of a broader and more searching inquiry into the whole question of fuel for power, light and heat. The move inaugurated in France and Germany for the production of cheap alcohol and its utilization as fuel is attracting the attention of the nations and especially those in which the fuels are expensive.”

“What industry has ever attained to a permanent prominence without the patronage of woman?” a right-minded man asked after reading this notice in a fashion journal of that day: “Evolution has been as much a factor in the wearing apparel of the woman mobilist as the automobile itself. When it was first introduced women wore their every-day clothes, but they soon found these to be unsuitable from almost every point of view.” Illustrations of the costumes of that day show women wearing rubber coats and funny-shaped, flat hats which resemble a tam-bourine top-side down.

The editors of technical and class journals deemed themselves commissioned to enlighten the public as to the meaning of automobile vernacular that already had begun to creep in from European countries in energetic alliance with the rapidly developing automobile trade, whose influence in the matter of technical terms in a considerable degree came from the other side. “Pronunciation of foreign terms in use among motorists” was one editor’s caption. Continuing, he said: “Though Gottlieb Daimler is universally known as ‘the father of the automobile,’ he did not give it a German name, or, in fact, any name. The French took possession of the idea which Daimler and Benz had first given tangible form, and, while perfecting it, also evolved a vocabulary for use in referring to its construction, its use and abuse, its maladies and its functions. For example, ‘garage’ means a building where things are stored, watched and cared for, a storehouse; control, place or station where control is exercised. The name ‘chauffeur’ refers to one who heats something, a stoker or fireman. A ‘mechanicien’ means a mechanic. The term ‘chassis’ designates the running-gear and frame of the vehicle. The word is pronounced as though it were spelled shas-see. Thus, we might go on interminably.”

In calling attention to the January, 1893, Automobile Show, just successfully concluded, it was said: “French visitors, of whom there were many, including well-known manufacturers of cars

and carriage-bodies, must have been astonished at the vigorous prosecution of automobile designs not at all countenanced in their own country. But it may be imagined that they looked upon these as mere conditions bound to give way before the sweep of their own success in a few leading types. That ‘certain condescension in foreigners noted by Lowell cropped out in their published remarks, thinly glossed over with the veneer of extreme politeness, but their viewpoint was shared by legions of New Yorkers. ‘Your imitations are getting deucedly clever,’ we can hear their thoughts, ‘and it really looks as if you were going to be quite independent of us in aluminum carriage-bodies and upholstery. We shall evidently have to sell you chassis only. There we have you beat to a standstill.’”

R. I. Hains, a correspondent writing from Camden, N. J., about this time, excitedly refers to the sentiment expressed by the Governor of New Jersey in his message to the State Legislature, to the effect that “he can see nothing good in the trusts, and that the only evil in the State is the automobilists and their deadly machines.” His excellency winds up by urging a manufacturers’ law “that will be just to all.”

The first abbreviation of carriage to “car” was observed in the announcement of a new 12-horsepower Packard, Model C, early in 1903. The engine had a high compression and its maximum speed was 850 R. P. M.

Attention was called about this time to the disappearance of the belt-drive system, “sliding gears being now supreme. Electrical transmission is used to a very limited extent by French automobile makers.”

“Nautical searchlights are being adapted to the needs of motorists who seek the delights of illegal speeds in the hours of dusk and in deserted roads,” was one comment in the newspapers about this time. “Motoring with a searchlight is a novel innovation.” Some Port Richmond, Staten Island, people upon discovering an automobile in the distance throwing out its searchlight mistook it for the tail of a comet and ran into the house and hid out of sheer fright.

The Brush patents on electric storage batteries expired by the seventeen-year limit, in March, 1903. The probable effect on the automobile industry was discussed thus: “It is expected by many that improvements which heretofore were found impossible to squeeze in under the market price and therefore lay dormant will now be generally introduced.”

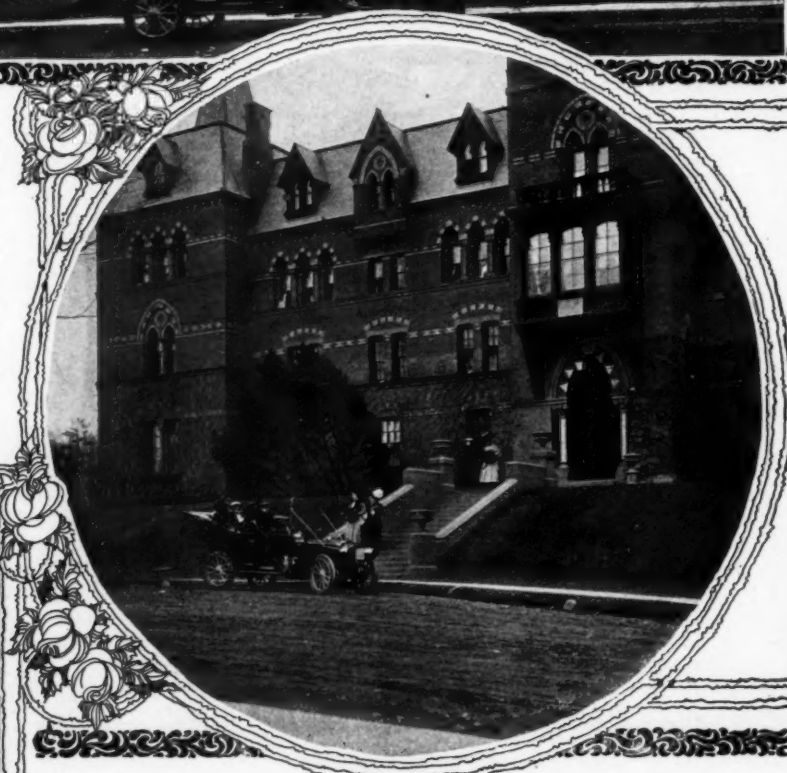
In proof of editorial good will to all the world this paragraph was published in THE AUTOMOBILE: “Nobody can in fairness object to the importation of European-built automobiles, so long as they are sold on fair representation. If importers can do this business over a 45-tariff bar, they are entitled to their success.”

The question of the standard gauge early engaged the attention of automobile manufacturers. The standard American railway gauge is 56½ inches. The wagon gauge, or track, is 56 inches. One writer remarked: “There is more in the matter than the first glance reveals. Shown by fact, the automobile industry ‘standard’ means 54 inches, about as often as it does 56 inches. This excludes the narrow gauge and scattering returns, from 48 to 52½. In the country the gauge is measured from centre to centre of the tire. The country gauge is 56 inches in most sections, but not in all. For example, in New Jersey the gauge is 60 inches from centre to centre. In Rhode Island it is 62 inches. From the constructor’s point of view, either ‘standard’ gauge is 6 inches too wide for most effective use of material.”



**B**EAUTIFUL Ithaca! home of Cornell! A celebrated man, addressing a graduating class, remarked, "I can now well understand why Ulysses, after all his travels, returned to Ithaca."

I was not prepared for such hilly, almost mountainous country, though as we approached the town I realized that our train had for some time been steadily climbing. But on leaving the station, which is in the valley, I noticed that the street car at once began climbing; and on entering the campus and moving toward Sage College, the home for women, I knew by shortness of breath that I was climbing.



SHOWING A CORNER OF SAGE COLLEGE, THE HOME OF THE FAIR "CO-EDS"



Cascadilla Gorge, with Bridge at Entrance to Campus

It was late in the evening and dark, but I was heartily glad afterward of that delayed carriage, for as we paused a moment on Cascadilla bridge, at the entrance to the grounds, and heard the rush of water through the inky blackness of the gorge below, I felt as one standing "far from the madding crowd" in one of the smaller cañons of the Rockies, rather than at the gateway to the busy life of a great cosmopolitan university.

We were topping one of the highest hills, and the myriad lights of the town, twinkling in the distance far below, seemed to be transmitting some mysterious message of the world to the great receiving light in the library tower above. The great illuminated clock, visible for miles around, pointed to nine, and as we paused in silent admiration the awe of the moment was dispelled by the sound of the beautiful college chimes.

Next morning was bright and sunny. The continued mild weather of the week had melted every trace of snow, and only the barren branches of the deciduous trees about us and the white-capped hills in the distance gave any hint of the approaching winter.

Insisting that I must see their beloved campus at once, my





WHERE MOTORING SPELLS CLIMBING—BUFFALO STREET, AN APPROACH TO CORNELL

fair co-ed hostesses took me immediately after breakfast for an inspection of the grounds which comprise 500 acres. First the different buildings were pointed out with pride, then the students' little basement shop, The Coöp, visited for necessary supplies, then a walk proposed. A turn past one of the great halls of learning brought us to a point directly opposite where we had the night before entered and almost at a step we reached beautiful Fall Creek gorge. A short distance above a dam held back part of the waters of a tiny lake, to turn aside through the hydraulic laboratory, but enough escaped to tumble in a glorious cascade down Triphammer Falls. And across the narrow valley the swinging bridge, hanging high in air like a thread from cliff to cliff, vibrated to our step as in almost human accord with our feelings of wonder and surprise.

Yet the delights of even such an interesting walk could hardly satisfy one used to the pleasures of motoring, and at the very earliest opportunity we planned to see more fully Cornell's many attractions from the vantage point of an automobile.

A fine new 1911 Maxwell drew up for us in front of Sage College after luncheon, as the last of the girls were going out

for their afternoon lectures. Our photographer, too, had arrived, but after stopping to get the building, the run around the corner showed the last of the students just disappearing for their 2 o'clock work. We had already passed Barnes Hall, the home of the Christian Association, Sage Chapel, renowned for the beauty of its interior decorations, and the library with its commanding tower, and we now stood at the head of the great quadrangle which but a moment before had been alive with its thousands of students.

There on every side stood the buildings in all their grandeur. Behind us was Boardman Hall, devoted to the uses of the College



A Campus View of Fall Creek Gorge  
Cayuga Lake in the Distance

of Law, and Stimson Hall, to anatomy, histology, and to medicine as far as taught in Ithaca (that course is completed in New York City). To our left arose the group of old bluestone buildings, Morrill Hall, containing the offices of administration, classrooms and laboratory of the Department of Psychology; McGraw Hall, the Department of Geology, with its related sciences, and White Hall, classrooms and the laboratory of the Department of Education. Across the north end, and facing us, stood Franklin Hall, a redstone building devoted to physics, and Sibley College, comprising the schools of mechanical, electrical, marine and railway engineering. Next, on the right, came Lincoln Hall, occupied by the colleges of civil engineering and architecture, and then classic Goldwin Smith Hall—the College of Arts—impressive in its simplicity.

Wishing, however, to get a new view of Fall Creek gorge, we retraced our path, passing many of the handsome fraternity houses, and climbing up another way. The hill was steep, the road narrow and muddy, and my heart almost failed me as I thought, "What if—?" But no; on we moved, easily, steadily, clear to the top, where as we crossed another bridge we caught a most magnificent view. And down immediately under our

slender support of wood and iron, raced the mountain stream on toward beautiful Ithaca Falls.

Turning, then, as from a microscopic to a telescopic view, we left the grounds behind us, passing down through Buffalo street (where in a few short blocks there is a sharp decline of several hundred feet), out across the valley and up an opposite hill to where we could see the whole university in panoramic effect.

But it was beginning to rain, and we had to go back spinning. A stop with more friends for a typical bedroom spread delayed us until dark, and I returned at six o'clock, filled with all the ardor of a full-fledged college girl.

Then, fitting ending for such a perfect day, the tower chimes began to play, first a gay little French gavotte, next beautiful Loch Lomond, and, last of all, thrilling in its suggestiveness, the Cornell Evening Song:

When the sun fades far away  
In the crimson of the west,  
And the voices of the day  
Murmur low and sink to rest  
Music with the twilight falls  
O'er the dreaming lake and dell:  
'Tis an echo from the walls  
Of our own, our fair Cornell.

## Popular Motor Effects

### M. C. Hillick Has Something Interesting and of Value to Disclose, Bearing Upon the Subject of Finish in Popular Effects

IN previous issues of THE AUTOMOBILE we have pointed out the fact that despite the apparently great number of colors in use upon automobiles the basic colors are comparatively few in number, the multiplication of effects being made from these main pigments.

One of the colors which cannot very well be made to run its course beyond three shades, light, medium and deep, is maroon. This color has been deservedly popular for at least a decade, first upon the horse-drawn carriage and later upon the automobile. It is a color that grows upon one's sense of proportion, beauty and economy. It has depth and brilliancy of tone; it is a neutral color with reference to its effect upon people during the various seasons of the year, and, perhaps more important still, it is under reasonable conditions unusually durable.

Maroon is produced upon the surface by getting the wood worked down smooth and fine and priming it, in case of new work, with a straight linseed oil primer into which is stirred enough lead or some other pigment to stain the medium. A coat of stout lead above this, with puttying of checks and fissures to follow, after which, in due time, is laid on four or five coats of roughstuff, brings the foundation surface ready to rub. This work is performed with water and artificial pumice stone, the rubbing being continued until both a level and smooth surface is obtained. A light sandpapering with No. 0 sandpaper will polish the surface down and brush away any obstructive accumulation, whereupon the first coat of maroon may be applied.

However, before using the maroon we would advise as a measure of economy and as a guarantee of good results as well the application of a preparation coat consisting of, say, Tuscan red, 3 parts; Indian red, one part, both ground in japan and thinned to a nice working consistency with turpentine. Over this ground the maroon, thinned simply with turpentine and given 30 drops of raw linseed oil to a pint of color, is applied.

Now break some of the maroon up gradually in turpentine until a smooth liquid consistency is reached, at which point add elastic rubbing varnish in the proportion of one pound of varnish to each two ounces of color. Mix thoroughly and apply freely to the surface quite in the same way that a coat of varnish would be put on.

This varnish-color having dried thoroughly, go over it with a small wool sponge, or a soft bit of felt, moistened and dipped in pumice stone flour, to "kill" the gloss, after which wash the surface with clean water and repeat the coat of maroon varnish color, reducing, however, the quantity of color used in the one pound of varnish by one-half. This coat will sharpen the luster of the surface, and will enable the workman to rub the varnish down closer, which work having been accomplished the surface may, if required, be striped and ornamented, and then given a coat of clear, pale, rubbing varnish. Another rubbing with water and pumice stone flour, after the varnish has dried firm and hard, brings the work down to the final step, that of applying the finishing coat of varnish.

Thus brought along to a finish and given decent treatment during its life upon the surface, maroon will prove not only an entirely satisfying color but one unsurpassed in the matter of durability. The medium shade is the one mostly used for automobile work.

Blue in its various shades is another color that promises to retain its popularity with automobile users. It is a color, nevertheless, that gives the painter plenty of trouble, as a rule, to develop, owing to its tendency to discolor under varnish. Deep and medium shades of blue are especially affected in this way, and, on the whole, are less durable generally. Blues are very brilliant in color tone, and afford an unsurpassed charm of color effect when nicely wrought out. The most beautiful of all the blues and the one more extensively used upon automobiles than all others combined is ultramarine blue. By using different shades of color for the ground under the ultramarine various shades of the blue are produced. The ground colors may be made, for the lighter blues, of Prussian blue and flake white, adding the blue, on account of its powerful coloring property, to the white rather than the white to the blue. Beat together to a fine mixture, add for first coat one part raw linseed to six parts turpentine, and lay out with a flat camel's-hair brush.

For the deeper shades of the ultramarine make the ground color of either straight lamp-black or a deep brown, the latter being made of Indian red and ivory black.

The surface should be brought up as smooth and level as the



best skill and circumstances will permit, with all fractures and cavities filled flush with putty colored precisely to the shade of the groundwork. Having the right ground color in place on the surface proceed to lay on a coat of the flat ultramarine blue whipped to the proper consistency with turpentine, adding to each eight parts of turpentine one part raw linseed oil. With what should now prove a solid, even color all over, the ultramarine glaze may be applied, the preparation of which is as follows: Into a pint of elastic rubbing varnish stir intimately two ounces of color, the blue being first cut out to cream-like consistency with turpentine. Flow on a full, free coat of this mixture and after it has dried properly rub over lightly with water and pumice stone flour, wash up, and apply a second coat of this same blue varnish color or glaze, thus maintaining the absolute purity of color tone and shade. If striping or ornamental lines are to go on the surface apply them over this second coat of glaze and pencil varnish them. Finish directly upon this surface, omitting the clear rubbing varnish entirely, the latter being ruinous to the brilliancy and beauty of the blue. As a matter of fact, varnish is an active enemy to almost any shade of blue, although it appears that the light blues are less affected adversely by the varnish than the deep and medium shades. Keep as much color as possible in the varnish right up to the finishing coat and thus insure the rich and magnificent quality of the blue.

### A Few Figures

That Will Convey a Slight Idea of the Immense Proportions Already Attained by a Comparatively New Industry

STATISTICS testify forcibly and beyond contradiction to the growth of the automobile industry and at the same time to the popularity of the self-propelled vehicle.

Looking backward and admitting the theory that the originators of the upward of two and a half millions of miles of roads in the United States prophesied their necessity owing to the destined advent of the automobile, the statement is timely to the end that in the year 1900 there were only 3,500 automobiles in North America. These figures are in appalling comparison with the estimate for 1911, which gives the number of machines in the hands of purchasers and in stock as over 440,000. In the year 1900 there were 27 factories in the United States for the production of automobiles, the individual capacity of none of these factories being beyond 200 cars per year. There are at present over 395 plants distributed throughout this country. The amount of capital involved in 1900 was \$6,200,000, as compared with the sum of \$450,000,000 invested in factories and tools for the making of automobiles in 1911. Of this amount at least \$275,000,000 is devoted to the maintenance of automobile factories. There were only 2,000 persons employed in the automobile industry in 1900. To-day over 280,000 persons take part in the many branches of the trade, from the rough-material departments to the finishing rooms.

Here are some items relative to materials used in the making of the automobile: Taking the flat figure of 440,000 automobiles now extant in America as a basis, the machines contain 352,000,000 pounds of steel; 2,200,000 tires, weighing 52,000,000 pounds and 17,000,000 feet in length; 2,640,000 tubes, weighing 21,120,000 pounds and 21,120,000 feet in length; while the total weight of the machines is 660,000,000 pounds.

Taking the foregoing figures as a criterion, it is fair to ask when the million and a half mark of automobiles in the United States will be reached. Such an attainment, let it be said, would imply the ownership of one automobile by every farmer of any importance, and also by many salaried workers. Comparing the probable increase of population in America of 1915 with the present census, and supposing that the automobiles in this country then numbered one and a half million, this would allow one automobile to every seventy persons.

It is predicted by some that by 1915 the \$500 car will have been developed to at least a semblance of perfection. It is

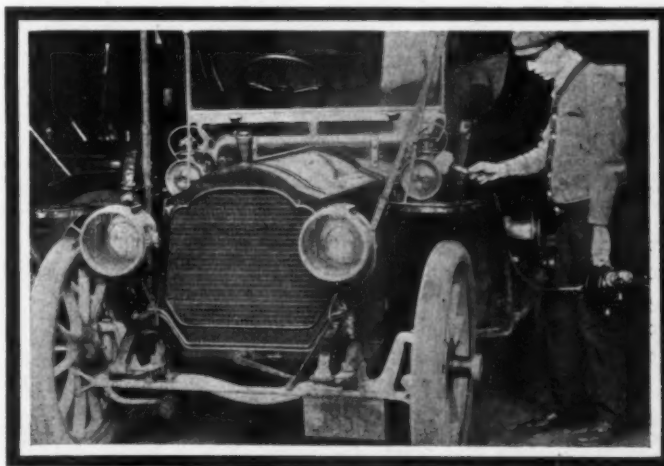
prophesied that in that day a four-cylinder car of 20 to 25 horsepower, with a wheel base of not less than 100 inches, and 32 to 34-inch tires—a car made to carry four or five persons, in series of not less than 50,000, the car which now sells for \$750 to \$1,000—will be manufactured for \$500.

### Electric Motor Polisher

In the Owner's Garage It Is Worth While Having Good Facilities

CLEANING the automobile promotes economy and so lowers the rate of depreciation that, at the end of the year, the owner will find his funds where they belong, i. e., in the bank instead of in the pocket of the repairman. There is nothing that is of greater importance than maintaining the good appearance of the body and trim; this is due to the fact that the average owner of a car is likely to reach the conclusion that his car is in a bad state of repair when it may only be in a soiled state. To go to the repairman and ask him about it is to tempt him to find all sorts of trouble in the car, and if a repair account is generated under such conditions, it must be directly charged to the fact that the owner of the car has been deceived by his own folly.

It is proper, therefore, to keep the automobile looking as well as possible. This will be readily accomplished if the car is washed every time it is brought in off the road, and if the "bright work" is polished as often as the occasion requires. It is quite a task to maintain this polish. If a good polish is induced in a surface of metal it will persist for some time, but if the surface is allowed to degenerate it is quite a task to rehabilitate it. The illustration here given of the new Westinghouse motor polisher is one of the most complete devices of the kind that has been offered. This motor is small, compact and so designed as to be easy to handle. It is rated at 1-20 horsepower, and may be run from electric current that may be tapped from a lamp socket if electricity is used in the garage. That electric lighting is the proper illuminating means to employ is true, on account of its safety. Power is transmitted from the motor to the buffing wheel through a flexible shaft and by means of a flexible cord that is connected to the motor at one end and to the lamp socket at the other end, the operator is enabled to go around the automobile, reaching every bit of bright work that has to be maintained in a high state of polish if the automobile is to be regarded as up to its proper level from the appearance point of view. Why parts will deteriorate if they are allowed to rust and tarnish is probably too well appreciated to require discussion, but the fact remains that quite a few automobilists, if they do understand the reason, fail to take heed.



Depicting the Westinghouse polishing motor, which is devised for the purpose of aiding the automobilist to maintain a high state of polish of bright work on the car

## Injunctions for the Automobilist Reminders, Put in Terse Form

for the Automobilist, Who, Through Inexperience or Thoughtlessness, Is Likely to Come Out at the Little End of the Horn

Don't skylark with a joke that is to be played upon you by the man who has a junker to dispose of.

Don't experiment with the sweet-running qualities of a decrepit outcast of an automobile; if there ever was anything sweet about such a car it probably departed at the solicitation of much service, and, who knows, abuse.

Don't invest in an uncertainty; the funds that you have to part with are not in that classification.

Don't invite the fire of a battery of masked ideas; if they are submerged in mystery let some other person unravel the skein.

Don't gallop with the enemy's cuirassiers; they might lead you to slaughter.

Don't deal with a man whose soul is hardened; granite is too unresponsive; you cannot be sure that you will be able to get your value out of a stone.

Don't enter a frenzied whirl and part with your money in the interim; when the smoke clears away, as experience seems to indicate, the fellow who makes the frenzy has his pockets bulging out.

Don't bother with the eruption of canister; all that you need is a calm, impassive settlement of a pending negotiation.

Don't help fill over-crowded graveyards; there are enough men who purchased the kind of automobiles that were not suited to their needs; get the kind that will do your work.

Don't assail your prospects; all that you have to do is to keep your head upon your shoulders.

Don't linger on the outskirts of a melée; it might suddenly be converted into a whirlwind.

Don't forget to give combat for possession of the plateau of success.

Don't enter the twilight of an uncertain undertaking equipped for the fray by a package of uncertainty.

Don't ask for respite; why place yourself in a position of such great disadvantage?

Don't say that it is destiny when you have your hopes shattered by a stroke of stupidity on your part, or intimate that you are a great magician if you merely take advantage of the weakness of your opponent.

Don't be a fugitive from success; run like a hare from failure.

Don't join in the legion of the stupid; go to the university of the capable.

Don't hold your mouth open while your opponent places the gag in your teeth.

Don't look with scared awe at the man who is leading you on to failure—trip him up.

Don't enter a coalition of little men; the woods are full of them.

Don't iron creases in your ideas; allow them to expand.

Don't think that the hillside will tremble if you tell people what you want; let your batteries flash!

Don't eat from the hand of the prodigious commonplace.

Don't go at a furious gallop to the first place where automobiles are sold and beg the man to sell one to you; saunter in, show nonchalance; be at ease; select a good automobile.

Don't call upon a highly respected robber and allow him to part you from your funds.

Don't make a good resolution and then allow the first obstacle that you meet take it away from you.

Don't fumble with the idea that eagles do not issue from shells, but do take note of the fact that eagles are on poor speaking terms with rotten eggs.

Don't go on the assumption that diamonds are only found in the darkness of the earth; they are frequently discovered in the darkness of the stupidity of the owner by the fellow who takes a keen interest in them.

Don't accept a guarantee that is full of enigmatic lines written in dog Latin.

Don't forget that a man must make enormous exertions when the holes are very deep—keep out of the ruts.

Don't forget to scrutinize the clumps that appear in the offing; they may conceal a snag.

### What Good Roads Will Do

The Road Is the Other  
Half of the Automobile;  
the Chain Is As Strong  
As Its Weakest Link

**M**ECHANICS, and those of a purely mechanical mind, when they contemplate the automobile, think of the mechanisms, and how to solve the problem of making the car do better work than it is now capable of, with scarcely a thought of the fact that the road, if it is not good, is in the way of success. Were all roads good, automobiles would perform with excellent results were they barely half as well designed and constructed as they are at the present time. The fact of the matter is that the road is half of the car, and, fortunately, it is the half that can be used by all. The time will soon come when there will be 500,000 automobiles on the road in America, and, assuming that the average cost of each automobile is about \$1,600, it is a simple computation that leads to the conclusion that these automobiles cost the community \$800,000,000. Were it possible to consider that one-half of this money could be saved were roads so good that the cars would render up satisfaction were they half as good as they are at the present time, it is a fair inference that this would leave \$400,000,000 to the account of good roads. This is a vast sum of money, and were it applied to the building of roads, it would pay for a considerable mileage of them. But there is a secondary advantage to be remembered. The good roads would serve for twice as many automobiles as we have in actual service just as well as they do for the number that are now running on the roads.

A proper consideration of the whole matter would lead to the conclusion that the quicker the question of good roads is taken up with a vim the better it will be for the maker and the user alike. From the user's point of view the repair question is a serious matter. Were the roads good the repairs would be less marked. At the present time, taking the repair and depreciation account at a rate of 20 per cent., the users of automobiles are going down in their pockets at the rate of \$160,000,000 per year.

On the same basis as the first cost was above considered, this would mean that there would be a saving of \$80,000,000 per year in cost of repairing and in the depreciation of cars, taking these items combined. Every argument that is entered into on a basis of experience points the way to good roads—let us have good roads.



## Questions That Arise

Some of Those That Come Up in  
Every-Day Automobiling Are An-  
swered by the Matter Presented by Forrest R. Jones in the New Edition  
of the "Automobile Catechism"

[389]—What is a bi-polar magneto?

One which has two magnetic poles (pole-pieces). A magneto always has at least two poles. Probably all automobile ignition magnetos with shuttle-wound armatures are bi-polar.

[390]—What is a multi-polar magneto or other form of dynamo-electric generator?

One having several magnetic poles; sometimes as many as twelve or fourteen magnetic poles are used in a magneto applied to ignition purposes.

[391]—What is a high-frequency magneto?

One which produces electric impulses at a much more rapid rate than ignition occurs in the motor. This refers especially to automobile practice.

[392]—How is high-frequency, low-tension electric current utilized for high-tension ignition?

Ordinarily in the same manner as battery current. The ignition system is of the same form as for a battery, with the exception that the high-frequency magneto is substituted for the battery.

A transformer spark coil with a trembler is used in connection with a timer, as for high-tension battery ignition. Or the battery system with auxiliary trembler coil can be used on high-frequency current.

[393]—Will all trembler spark coils operate satisfactorily on high-frequency alternating current?

No. Only those whose trembler is light enough and otherwise constructed so as to vibrate at a very rapid rate.

Some trembler spark coils, especially those of earlier design for battery current, have tremblers which do not vibrate rapidly enough for high-frequency current.

[394]—Is a constant speed ratio necessary between the crankshaft of a motor and the rotary inductor of a high-frequency magneto which has no interrupter?

It is desirable, but not necessary, to have the rotor and magneto operate in synchronism. It is more desirable the lower the frequency of the generator. A very high-frequency magneto may be belt-driven and give fairly satisfactory ignition.

[395]—How fast does the inductor of a high-frequency bi-polar magneto rotate?

Generally at least twice as fast as the crankshaft of the motor; considerably faster in most cases.

[396]—Describe the general form of one type of multi-polar magneto for high-frequency current.

In one type several wire-wound spools are arranged in a circle with one end of the core of each spool fastened to one side of an iron ring. The arrangement is such as would be obtained by fastening the spools to one side of the rim of a wheel with the spool ends against the side of the rim.

Each spool is wound with a single coil of insulated wire. Each coil is electrically connected to the coils of the two spools which are adjacent on opposite sides. The windings are connected together, end to end, except one pair of ends which are left free for connecting to the other apparatus.

Several permanent magnets of a V-shaped form are fastened to the side of a rotor so that the bend or crown of each magnet is near the shaft of the rotor, and the pole ends point out radially. The sides of the magnet poles pass close to the free ends of the cores of the coils as the rotor revolves. There are as many V-shaped magnets as there are spool-wound coils.

Electric impulses are generated in the winding as the rotor carries the magnet poles successively past the ends of the coil cores. As many electric impulses are generated per revolution as there are spool-wound coils in the magneto.

[397]—What is a high-tension magneto for jump-spark ignition?

One that generates an electric pressure high enough to force a jump-spark across the spark-gap of a high-tension spark-plug without the aid of any auxiliary apparatus such as a spark-coil. High-tension magnetos ordinarily have an interrupter which operates to produce a spark at the proper instant.

The high-tension magneto is an embodiment, in one piece of apparatus, of all the parts which make up a high-tension system composed of separate pieces connected together by electric conductors such as wires.

## Taxicabs in London

An Insight Into the System as It  
Obtains in the English Metropolis

BY starting from a central congested point, say, the Bank or Oxford Circus, or Piccadilly, in London, two passengers may travel in a taxicab a distance of three miles for 3 shillings (75 cents). In sections where the traffic is not congested they may ride fully four miles for the same amount of fare. It is the usual custom to tip the driver from 2 pence to 4 pence (4 to 8 cents). As a consequence of these low rates of fare, taxicabs are very liberally patronized in the British Metropolis. Besides, the multiplicity of taxicabs generously distributed in all parts of London's manifold acres renders them a delight as well as a welcome accommodation. Indeed, so cheap are these vehicles that one feels no inclination to walk.

As a usual thing, taxicabs are licensed to carry four persons. The legal fare having been fixed for two persons, an additional passenger is required to pay sixpence (12 cents) for the entire journey, no matter how long the distance may be. But the fare for two extra passengers is the same as it would be for one. Two children under ten years of age are regarded as constituting one passenger. Twopence (4 cents) is levied for carrying a perambulator, a child's mail-cart, or a bicycle on the outside of the taxicab.

Every public automobile is obliged to carry a taximeter for recording the fares. The rates follow: For one mile or less, for a journey or time consumed to the extent of ten minutes, eightpence (16 cents); over one mile, or over ten minutes, for each additional quarter of a mile, or period not beyond two and one-half minutes, an additional twopence is charged. A like charge is made for any less period or distance exceeding one mile, or ten minutes.

Every convenience is afforded patrons, as well as drivers. A prize is put upon the honesty of drivers in the case of the finding of lost articles. In all parts of London ranks (stands) are to be found. In a great many instances shelter houses are provided by the taxicab companies, fitted with telephones for the accommodation of neighboring residents. In case there should be no shelter house near at hand, the prospective passenger may call up the nearest district messenger office, whose manager will order a taxicab to call at the passenger's house.

## Aligning Wheels and Replacing Springs

Editor THE AUTOMOBILE:

[2,510]—I have been interested in the articles in THE AUTOMOBILE on the alignment of automobile wheels. I have noticed that the front axle on my car was not at right angles to the frame, and upon taking out one of the front springs (both springs are new) I found that the center pin is not midway between the ends of the spring, and that the center pins of the leaves are still farther away from the mid-point between the ends. Moreover, the spring was not put together with the long ends of the leaves all at one end of the spring. Was this right? And in putting the spring in the car, should the short or the long end be forward? Please tell just how the spring should be put into place.

I was much interested in the solution given in letter 2,462, but would like to inquire if it would not be possible and more convenient to pass exhaust gases through the tubing surrounding the intake manifold? If exhaust gases were used, what would be the best size tubing to use, and would copper stand the heat? Also, would there be danger of melting the Y-joint in the manifold?

L. W. PRESCOTT.

Takoma Park, S. C.

The long ends of the springs should be all at the same end of the spring, as shown in Fig. 1, and the shorter end should be towards the front.

There is no objection to heating the coil pipe by means of the exhaust gases. This was common practice some five years ago with the majority of pressure-fed lubricators. It has the advantage of heating the part sooner than water will, but it is apt to get clogged up. The heat will not be sufficient to affect the tightness of the manifold joints.

## Method of Internally Heating the Gases

Editor THE AUTOMOBILE:

[2,511]—Would it be possible to place a coil of pipes in the intake manifold instead of outside to heat the gases, or would this have the effect of causing condensation? I am troubled in the same way as one of your correspondents, in that my carbureter

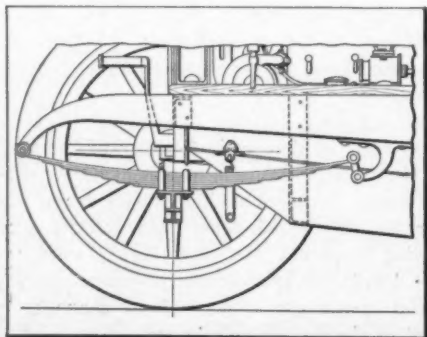


Fig. 1—Showing proper arrangement of springs, with short ends toward the front

## What Some Subscribers Desire to Know

is very far from the cylinders, and owing to the disposition of the parts it is impossible to alter this.

J. W. B.

Altoona, Pa.

The method you suggest would not have much advantage, if any, over heating the pipe from the exterior, and in addition it might set up disturbances restricting the flow of the ingoing gases. A means of being sure that the gases are heated will be seen if reference is made to Fig. 2. It is an idea that appeared in a foreign journal, and consists of several small tubes (through which the gases pass) soldered at both ends to small plates. This forms a radiator, and the water can be turned off at will if a cock is fitted in the water circuit.

## Removing Piston Rings

Editor THE AUTOMOBILE:

[2,512]—What advantage is there in removing the piston rings from time to time?

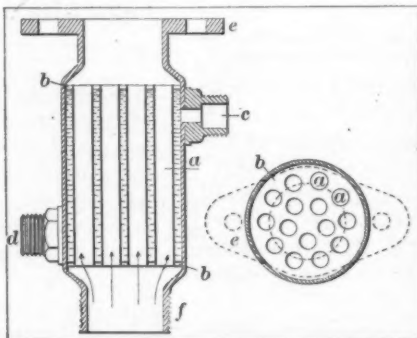


Fig. 2—A method of heating the gases that obtains on some foreign cars

I recently undertook this job on my car, with disastrous results. The rings have a great amount of elasticity, but they have a nasty knack of breaking just when you get them to the point of sufficient expansion.

DEJECTED.

Allentown, Pa.

We can sympathize with you in your trouble because piston ring removal is not the easiest thing in the world. It is not an unknown thing for an experienced mechanic to break a ring occasionally. A suggestion that might be of use to you is shown in Fig. 3. It consists of a pair of pliers with a small spring inserted to keep them closed. The ends should be formed according to the shape of the ring slots.

## No Torque Rods

Editor THE AUTOMOBILE:

[2,513]—There are no torque rods on my car at present, and I should like to know how it would be possible to make an attachment to the tubular shaft that carries the propeller shaft to take the thrust when starting.

T. W. SANCHEZ.

Havana, Cuba.

The Editor invites owners and drivers of automobiles who are subscribers to THE AUTOMOBILE to communicate their automobile troubles, stating them briefly, on one side of the paper only, giving as clear a diagnosis as possible in each case, and a sketch, even though it may be rough, for the purpose of aiding the Editor to understand the nature of the difficulty. Each letter will be answered in these columns in the order of its receipt. The name and address of the subscriber must be given, as evidence of good faith, adding a *nom de plume* if the writer desires to withhold his name from publication.

Without knowing more details as to the disposition of the cross-members of your car, we should say that it would be possible to do what you want in the manner shown in Fig. 4. The addition consists of a collar which is permanently attached to the tube and forked at the end so that the two arms will fit into the bracket. If the cross-frame members are not of very stout section it might be advisable to fit distance-pieces to strengthen the cross-members.

## A Trio of Queries

Editor THE AUTOMOBILE:

[2,514]—1. On a four-cylinder motor having no provision for adjustments on the valve lifters, the exhaust valve lifter on one cylinder has dropped back in guide about 1-64th of an inch or more. How would this affect the general efficiency of motor? What is the cause of this and how can it be remedied?

2. After driving car for short time the grease from differential runs out of the rear axle on right side around brake drum and is thrown over body, mud guard and wheel tire. What is the reason, and is there a cure?

3. What would be necessary to do to equip a four-cylinder T-head motor with double ignition? Present equipment consists of Remy H. T. magneto and coil with dry cells for starting. Would such a magneto furnish spark for two plugs simultaneously over inlet and exhaust valves?

London, Ont.

ENQUIRER.

1. The cause or causes of the valve-lifter gap are as follows, and in your case you should make sure which it is:

- (a) Worn cam;
- (b) Worn end of push rod or roller;
- (c) Worn roller pin;
- (d) Shortening of push rod due to hammering effect;
- (e) Worn valve stem due to the same cause;
- (f) Pitted valve seat or mushroom;
- (g) Bent cam shaft.

The most common cause is either (c), (d) or (e), or a combination of all three.





## What Other Subscribers Have to Say

The Editor invites owners and drivers of automobiles who are subscribers to THE AUTOMOBILE to communicate their personal experiences for publication in these columns for the worthy purpose of aiding brother automobilists who may be in need of just the information that this process will afford. Communications should be brief, on one side of the paper only, and clearly put, including a rough sketch when it is possible to do so, and the name and address of the writer should be given as evidence of good faith, adding a nom de plume if the writer desires to withhold his name from publication.

If the lift of the valve is, for example, 7 millimeters for all cylinders, if one of these has its exhaust slightly strangled it stands to reason that this one cylinder will cause a certain amount of back pressure on the motor and thereby reduce its power and sweet running. If the stem has shortened, as in Fig. 5, it is an easy matter to have caps made to fit over the guides and file off enough of the valve stem to accommodate them, in the manner shown in Fig. 8. The exact amount of clearance cannot be determined without taking into consideration the requirements of the particular motor, as what in one motor would be far too little clearance would in another motor not be half enough. With the caps, however, a certain amount of latitude is given for experiment.

2. The reason for this is that there is too much clearance between the ball bearings. This can usually be remedied by interposing a metal washer. In some types of axles the following method is employed: Withdraw the shafts and braze a length of tubing over the shaft near the differential, which will act to all intents and purposes as an oil retainer.

3. In the case you mention, only one ignition can be used at a time, and it would be necessary to have a separate timer and coil of the high-tension type fitted in order to deliver two sparks at the same time. If possible connect the high-tension coil commutator with the advance lever that actuates the magneto in order to synchronize the two as far as possible.

### Increasing Compression

Editor THE AUTOMOBILE:

[2,515]—I am desirous of increasing the compression on my motor and would be obliged if you will answer me the following questions:

Will increasing the compression cause the engine bearing to wear out quickly?

Should the timing be altered from the present setting?

What is a simple way to increase the compression without much expense?

Middletown, N. J. CURIOUS.

With regard to the first two questions you ask, they cannot very well be answered without more data. It is a fact, however, that increased compression does have a tendency to cause the engine bearings to wear quicker than with a low compression, unless they are so constructed that they will withstand the extra strain. As far as the timing is concerned, it depends largely upon the contour of the cams, as with a high-compression motor the opening of the inlet and the closing of the exhaust valves is largely a matter for experiment.

The valve caps of your motor could be remade in the form shown in Fig. 7 and reduce the space taken at A in Fig. 6 by recessing. Don't use solder and try and

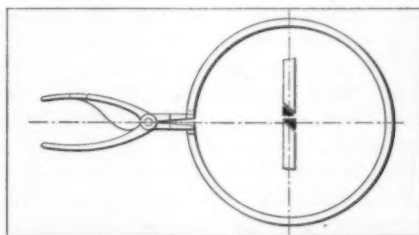


Fig. 3—A useful tool for removing piston rings

fill these holes up by sweating a plug in, as with the heat inside the motor the solder will run. It is cheaper to have new plugs made.

### Storing Tires for the Winter

Editor THE AUTOMOBILE:

[2,516]—Will you be kind enough to inform me through the columns of THE AUTOMOBILE, when an automobile is cleaned up for the winter and put in a good, dry house, to be left there, say, till the 1st of May, would it be better to jack the wheels up to take the weight off the tires, at the same time letting a little air out of them, or would it be better still to take the tires off the wheels and wrap them in paper?

How can one tell when the commutator is out of time, and will a machine run even although the commutator is partly out of time? Will it have as much power as if it were right?

A SUBSCRIBER.

Campus, Ill.

Undoubtedly it is better to remove the tires from the rims, clean them, sprinkle them with soapstone, wrap them in canvas or stout paper and place them in a dark and moderately cool atmosphere.

To determine whether the commutator is out of time, ascertain which cylinder is on the compression stroke. Set the advance

lever about one-fifth of its travel from the retard, and when the piston comes to the dead center the trembler of the coil should buzz. The motor may run smoothly if the commutator is out of time, provided it is only a matter of too much retard, but it will certainly not have the same power as when it is getting the proper amount of advance.

### All Motors of the Same Size Do Not Deliver the Same Power

Editor THE AUTOMOBILE:

[2,517]—Would you please answer the following question: Why is it that some motors of, say, 4 by 4 cylinders, are rated certain horsepowers and like sizes of other makes are rated differently?

Merna, Neb.

B. S. WELLS.

The power of a motor depends upon thermic relations rather than upon the bore and stroke. True, were all motors equally well designed, then size for size they would deliver the same measure of power.

### Common Sense and Common Law Are Twins

Editor THE AUTOMOBILE:

[2,518]—I would like to know if under the laws of Rhode Island it is compulsory to stop after running over a dog or a hen, and if the owner can collect for same.

L. A. ROBINSON.

Woonsocket, R. I.

Even in the absence of a specific statute you become amenable to the law if you commit a crime, destroy property or become a common nuisance. It may not necessarily be a misdemeanor under the law to run over a dog, but if the animal is the valued property of a citizen you do destroy property by such an act, and if you persist in running over dogs you run the chance of being called a "common nuisance." It is your duty, under the common law, to stop and repair the damage

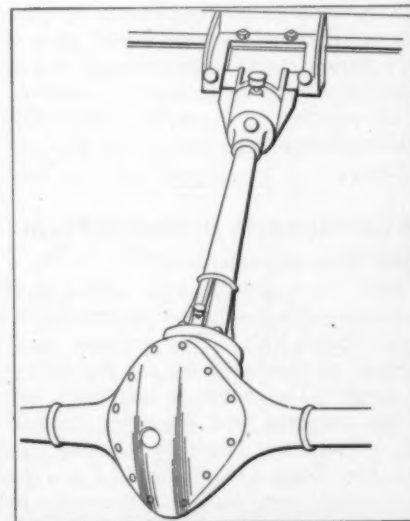


Fig. 4—Method of attaching tube to the frame to take torque

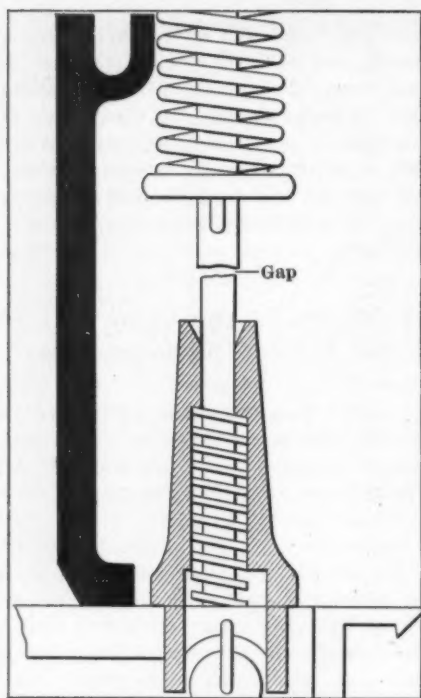


Fig. 5—Showing worn valve stem—a frequent cause of falling off of power

that you unwittingly do, although it is well understood in law that you do not have to convict yourself of a crime. You will know whether or not you deliberately and maliciously destroy property when you are automobiling, in which event you cannot be expected to convict yourself. But if you unwittingly destroy property, as a dog, the owner thereof is only entitled to the value of the animal, anyway, and you might just as well stop and settle. If the owner of the animal wants more than the value thereof let him collect it by due process of law.

### Experience Seems to Be Wanted in This Case

Editor THE AUTOMOBILE:

[2,519]—Will some one who has tried any of the carbon removers as advertised in THE AUTOMOBILE give me their experience? Will any particular one or any of them remove carbon from cylinders and pistons without injury to the motor?

H. D. BEDELL.

Hammondsport, N. Y.

### Everything Is Perfectly Plain

Editor THE AUTOMOBILE:

[2,520]—I would like your advice in regard to a car I bought last spring. It is a five-passenger Yale. They are now out of business. I purchased the car for delivering goods. The motor is four-cycle, two-cylinder, opposed type, planetary transmission. After I purchased the machine I put on a new timer and unit coil, and a few small repairs were made, but the motor has stripped a gear twice on the timer shaft

and once on the pump shaft, and I have found that it has always given trouble in this way. The transmission also seems to be too light for the hills around Jamestown. One person advises me to change the driving sprockets and reduce speed by putting in a countershaft and using two chains, but I am divided between two opinions, whether to put in a new motor and transmission or to trade the car in for a new one. I will add that the machine is heavy and strong and I believe would suit me better than a new light car (it seems to have had more abuse than wear) provided I can make it reliable. Now, what would you advise, or can you suggest some remedy? The party who bought the car told me that he had the motor rebuilt. I mention this to try and make everything plain.

SUBSCRIBER.

Jamestown, N. Y.

The disorder known as "tinkeritis" has crept into the system of this motor so thoroughly that it is like the "dumb-ague," and if it has the same persistence as the latter disease it may take a good doctor something like three years to bring about a satisfactory state of affairs.

Our first advice is that you stick to your guns. In other words, do not rebuild the car. If you will adjust the timing of the motor, then adjust the carbureter, and thereafter adjust the ignition so that you will realize a good spark, delivering it at the right time, the motor will work without any question. The disorder described as "tinkeritis" is the companion of "superstition." This being so, you are reduced to a state of mind where everything undertaken has the germ of uncertainty buried in its anatomy, and, in plain English, you do not know where you are at. Granting that it would be difficult for the Editor to enumerate each of the petty difficulties that stand in your way, the fact remains that you probably are trying to run your motor with a poor spark. When gasoline is mixed with air it will ignite without any question if the spark is good. The efficiency of performance will be improved materially should you see to it that the carbureter provides a well-balanced mixture, but an efficient spark will ignite a very poor mixture.

In timing your motor, proceed with one cylinder, just as if the other cylinder had no existence. When one cylinder is properly timed attack the other cylinder and treat it in the same way. The proper timing for your motor may be set down as follows:

TIMING RELATIONS UNDER AVERAGE CONDITIONS			
Lead of exhaust opening	Lag of inlet closing	Lag of exhaust closing	Lag of inlet opening
44°	33°	10°	17°

You do not have to conform to this exact timing, but you might try to approximate it as nearly as you can.

The spark should be but slightly retarded when the motor is being started. The motor would start easier were you to

slightly advance the spark, but the chances of a back kick would be imminent, although, if you pull the crank upward smartly, thus storing some energy in the flywheel, this energy would be released at the right instant and it would help to carry over the dead center so that a back kick would be a contingency that you would not have to reckon with.

In adjusting the carbureter it will be proper to try to make the motor run as slowly as possible, and this will be accomplished by adjusting the needle in the nozzle to obtain a rich mixture. If the mixture is too rich the motor will shut down, but if the mixture is too lean the motor will not run at the higher speeds. After the motor is adjusted to run at a very low speed, then increase the speed as much as possible, adjusting the auxiliary air-valve for the purpose. You will be aided in your carbureter undertaking if you will obtain from the maker of the carbureter an instruction book, which may be had for the asking.

Referring now to the battery, there is ample opportunity to be mistaken as to its ability, and the best thing to do is to make sure that the voltage is up to the requirement when the current is flowing.

It is possible to measure the voltage

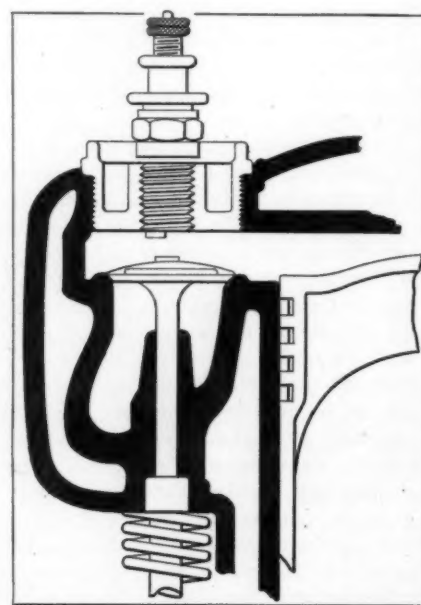


Fig. 6—Valve plug with a recess, causing loss of compression

across the terminals of a battery when it is not working, and to reach the conclusion under those conditions that it is in good order; but if the battery is polarized the voltage will drop alarmingly as soon as the circuit is closed and the current flows. You should be able to get some man in your vicinity who is familiar with your motor, and instead of permitting him to tell you why you should have a new automobile or a new motor just let him tell you how to make this one work.



## Reports Are Not Unfavorable to This Material

Editor THE AUTOMOBILE:

[2,521]—As a subscriber to THE AUTOMOBILE, I take the liberty to ask you if you know anything regarding the preparation known as "Flash" decarbonizer, and whether its use would be injurious to the cylinders in an automobile engine.

C. M. HOLT.

Holt's Summit, Mo.

Subscribers who desire information in relation to products advertised in the pages of THE AUTOMOBILE—and for that matter, any paper—put the Editor in a position to either admit that the paper holds advertising which should not be there, or they compel him to write a testimonial letter in favor of some given product. This particular letter is a sample of a great many communications along the same line, and while it is the desire to afford to communicants the advantage of such good advice as may be safe to give, the fact remains that information of the character wanted should be obtained in some other way. While it is true that the Editor strives to keep informed on every subject relative to automobiles and accessories, account should be taken of the enormity of the task, there being over 11,000 makers of

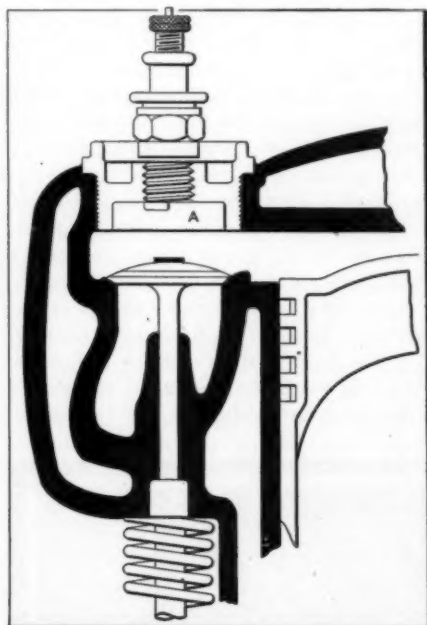


Fig. 7—Plug without recess to increase compression

accessories of one kind or another in the automobile art in this country, not mentioning the considerable number of companies that build automobiles. It would seem quite reasonable to expect that testimonials from ten users of a given product, which testimonials can no doubt be had from the maker, would be more to the point than to expect that the Editor can divide himself into over 11,000 parts and then have in his possession the precise character of information that should be at

the disposal of an actual user. If users will communicate their experience in relation to this or any other subject it will be given space.

## Intricate Thermal Relations to Cope With

Editor THE AUTOMOBILE:

[2,522]—Will you kindly enlighten me on the following carburetion questions:

1st. Given a Venturi tube, variable sized nozzle and constant head, will the gasoline delivery vary directly as the nozzle area so long as the velocity of air and consequently suction remain a constant? Will frictional resistance and capillarity materially affect the proportional delivery of varying sized nozzles, suction and head remaining constant?

2d. Does a 17 to 1 mixture mean by weight; if not, what does it mean?

3d. Should a carburetor give a uniform mixture for all engine speeds? If not, what is the supposedly proper mixture for:

- (a) 200 R.P.M.
- (b) 600 R.P.M.
- (c) 1000 R.P.M.
- (d) 1500 R.P.M.
- (e) 2000 R.P.M.

4th. Do different engines require different mixtures depending on valve setting, compression, etc.?

F. E. BACHMAN.

Port Henry, N. Y.

1. It has never been shown in practice that the Venturi tube would live up to its reputation. The tube does maintain certain fixed relations between gasoline and air up to a certain point, but it has been found necessary to provide some means of regulating the supply of air under different conditions of service, and nearly all carburetors at the present time are based upon some form of the Venturi idea coupled with an auxiliary air supply.

2. The 17 to 1 mixture as usually referred to means by weight.

3. Carburetors should be so designed that they will afford a uniform mixture at all speeds, but the use of an auxiliary air valve permits of changing the ratio of air to gasoline at the will of the driver. Read THE AUTOMOBILE and the Cantor lectures which were printed therein several weeks ago. These lectures gave all of the information required on this subject.

4. Different engines do not require different mixtures from the point of view of the ratio of gasoline to air. This is a fuel problem and is common to all motors.

## Sulphuric Acid Should Be About 1,200 S. G.

Editor THE AUTOMOBILE:

[2,523]—I am a subscriber to your magazine, THE AUTOMOBILE, and would like to have you tell me what per cent. sulphuric acid to use to charge a storage battery with.

G. MOUILLERAT.

New York City.

The electrolyte in a storage battery

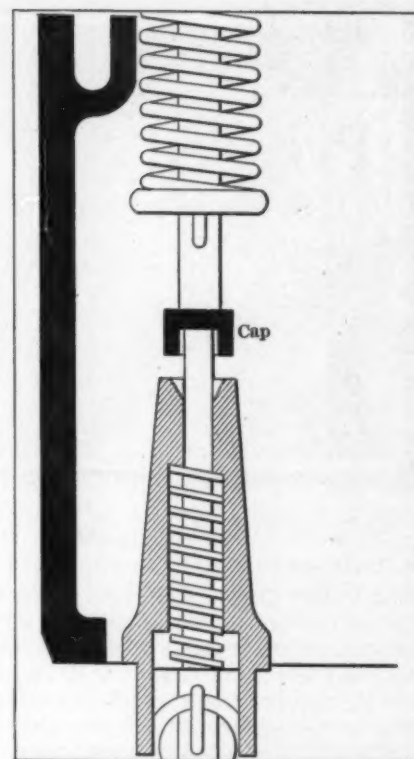


Fig. 8—Cap fitted over valve plunger to take care of wear

should run about 1,200 S. G., or 25 degrees Baume. It will be of maximum strength when the battery is fully charged, and it will be of minimum strength when the battery is fully discharged. The reason for this lies in the fact that during discharge of the battery the sulphur of the electrolyte combines with the active material of the lead plates to form sulphate of lead.

## The Relations Are Not Fixed by Any Means

Editor THE AUTOMOBILE:

[2,524]—How much more friction is there in a plain white metal bearing and a well-made roller bearing? About what is the difference between plain, roller, and ball bearings as regards friction and the amount of power consumed?

High River, Ala. E. H. SCHROUDER.

The friction that will be set up by a bearing depends upon the proportions of the bearing for the work as well as upon the type of bearing used. Each individual case must be investigated on its merits.

## Do Not Believe Opposed Crankshaft Would Be Satisfactory

Editor THE AUTOMOBILE:

[2,525]—I have a vertical 2-cylinder, 4-cycle motor in my car and find that the crankshaft is too light for the vibration. Do you think that a shaft for an opposed engine could be used in place of the present shaft if I should change the cams? Do you think it could be made to fire regularly? Engine has make-and-break spark.

Pittston, Pa.

R. M. S.

## Pressed Steel Frames

### Some Considerations to Be Borne in Mind in Their Manufacture and the Subsequent Handling by the Coach Builder and Repairman

THE frame of an automobile is subjected to various strains and stresses, and to the average person these are taken into little account when work of a drilling nature is to be performed. The frame is taken as a framework only, and when a hole is drilled in it little or no consideration is taken as to whether the metal drilled away was vital to the total strength. Body builders, through their workmen, are sinners in this respect. In cases where the side platform irons are not fixed by the maker of the chassis, who is really the proper person to do the work, a certain amount of indiscriminate drilling goes on, with the result that a series of three or four holes may be drilled to hold a simple step just at the point where the strength is most needed. It has been the aim of makers of cars and firms that make a specialty of chassis pressed steel framework to combine strength and lightness, and although the latter should not be brought to such low limits that the former is only barely sufficient to bear a certain load, nevertheless "the best-laid plans of mice and men gang aft agley" if holes are drilled in the frame at parts where they should not be.

The name pressed steel arises from the fact that what are called blanks are put in a powerful press and pressed into the shape that one sees them in in the car.

Work of this character is now conducted in a large way in plants especially fitted out for the purpose, and special heats of steel of a required composition for each type of material are ordered in such vast quantities that quality is very readily obtained on a basis of proven quality.

The material comes to the pressed steel mills in flat sheets of the required thickness, specified as to width, and sufficient in length to turn out the members to be made with very little waste, frequently without any trimming at all. If the work is to be done cold, which is a matter depending upon shape and the quality of the material to be used, the sheets are cut to approximately the right area, and through the use of suitably formed dies, which are fixed in the presses, the sheets are pressed into the required shape, generally in one operation, although some of the intricate cross-member sheets have to go through two or three operations and in many cases hot.

If the material is alloy steel, either with chromium, nickel or vanadium, the work must be done hot, in which event the sheets, after they are trimmed to the right size, are brought up to the desired heat in a furnace and then passed to the dies in the press, when the final operation of pressing is conducted—generally in a single operation. From the press the members go to the heat treatment room, where they are raised to a correcting temperature, then quenched in oil, and subsequently annealed in order to increase the elongation and bring up the other physical properties to conform to the original specifications, unless, under conditions of great skill, better results are evolved.

When the work is done cold, as it is with carbon steel, instead of oil quenching and annealing, the members are corrected by a simple annealing process, excepting in the cases of superior grades of specification carbon steel.

When the side bars and cross members are heat treated or otherwise completed in the absence of a heat-treated operation, they are then trimmed and put into final shape for assembling, which includes making the holes for rivets in some one of the ways as follows:

- (A) Punching.
- (B) Punching and reaming.

(C) Drilling.

(D) Drilling and reaming.

In this work special machine tools are used, among which pneumatic riveting equipment occupies the prominent place. The rivets are invariably very low in carbon for the content, and of a grade of material which will stand much heating abuse without showing deterioration. In hot riveting, as in the Cadillac and numerous other examples, advantage is taken of the shrinking of rivets when they cool. This pulls the plates into tight relation, thus preventing a tendency on the part of the members to work.

Cold riveting is very much in vogue, the rivets being of the same stock as when hot work is done, but with pneumatic tools it is possible to head up the rivets, considering good clamping during the performance, so that the members are brought closely together, and much pressure is exerted. It would seem, under the circumstances, as if riveting may be done by either of the methods, always with excellent results, provided the side bars and cross members are properly fitted, securely clamped and skilled labor performs the riveting operations.

It is of vital importance that riveting work on chassis frames should be carried out in such a manner that vibration will not affect the rigidity of the parts of the frame after it has been assembled. No doubt it is possible to rivet in such a manner as to hold the frame solid, but now that the hydro-oxygen process of welding has been brought to the present pitch of perfection the additional use of this method of welding after riveting should be borne in mind by makers.

Fig. 1 represents a frame of a light delivery wagon that is used in the city delivering light merchandise. It had been found that a goodly number of the rivets had spread in such a manner that the whole machinery was thereby affected. The subframe F carries the motor, and as the rivets in this were no longer holding as they should it was found advisable to prevent a recurrence by re-riveting them, besides welding the joints of the members together. This method has the advantage of strengthening the whole frame and permitting the use of smaller

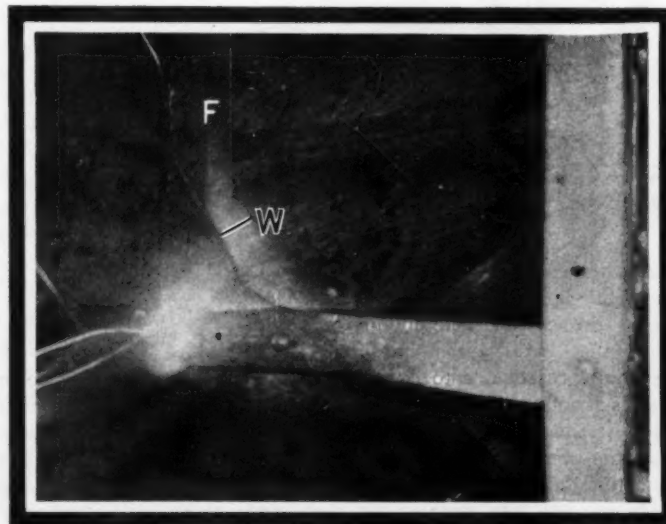


Fig. 1—Welding the joints of a frame that had become loose owing to the rivets having spread



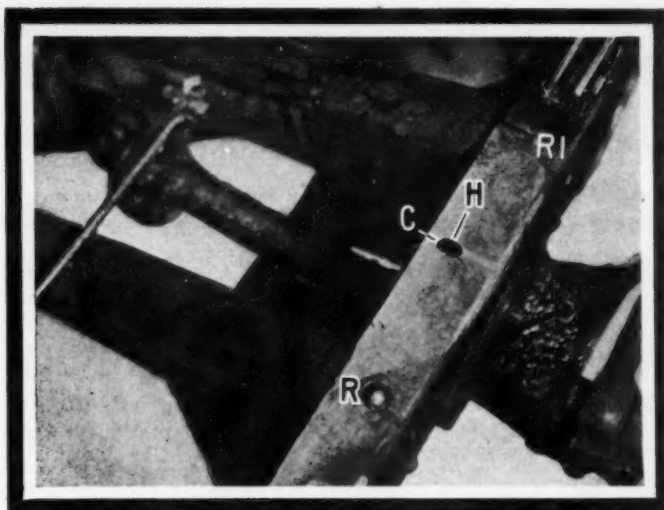


Fig. 2—Frame badly drilled for fixing body, and owing to excessive weight caused the frame to crack

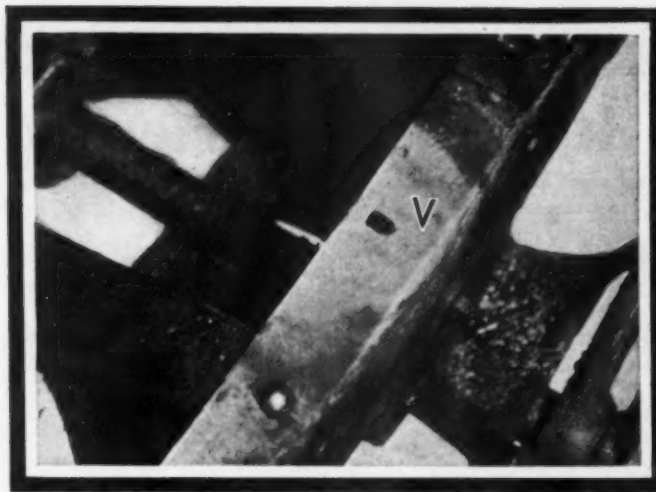


Fig. 3—Crack in frame repaired by the hydro-oxygen process of welding

rivets. Steel of one-eighth inch or less thickness can be welded without the addition of any welding metal. Thicker metal, however, should be beveled or chamfered, and, in the case in point, it might prove advantageous if some metal were run into the joints, as the additional metal, while adding to the strength, would not materially increase the weight. In welding steel the welding material should not be added until the edges of the body of metal are fused or molten at the place where the weld is being made. The welding metal usually employed for steel is in the form of wire *W* in Fig. 1. In adding metal to the weld it is necessary to hold the wire so that it touches the body of metal, because if the welding metal is allowed to drop through the flame it may be burned. The flame should not be held steadily in the center of the weld, but should be given a circular motion so as to drive the molten metal toward the center of the weld. In the case of the crack *C* in the frame, as seen in Fig. 2, this has been prepared by cutting a *V* with a file. The flame is then directed on the part cracked, which will have the effect of expanding the metal besides annealing the two together, after which, with the addition of welding metal, the *V* gap will be filled up as shown in Fig. 3.

Pleasure vehicle frames are not called upon to bear the same severe strains as commercial vehicles, as, although the vehicle is designed to carry a specific load with a small allowance for overweight, the capacity is more often arrived at as to what can be loaded and not what the load should be. As in all metal, there is a certain amount of springiness, and this is known as the elastic limit. If through superimposed weight or any other considerations this limit is exceeded the frame will take a "set."

The tension member of the frame—that is, the lower part of the *U* section of the channel—is called upon to withstand the weight strains, but with the majority of straight frames it does not come into tension until the set has taken place. In order to overcome this some frames are built with a camber so that when the frame comes to a level the lower dotted line shown in Fig. 4 is in tension and prevents further sagging.

The effect of a frame taking a set is to throw the power plant out of alignment with the transmission unless the two are one single unit, but nevertheless even in this case it will throw extra work on the universal couplings. Besides the load strains there come the strains due to fly-wheel action and the starting and stopping torque of the rear wheels. This comes at the point where the torque is taken up, as, for instance, in a chain driven at the jackshaft housing.

A pressed-steel frame is not necessarily weakened by being drilled provided the hole is made at such points that the strength of the section is not affected. In drilling the outside of the frame, if a point is taken exactly midway between the top and the bottom arm as a center, holes can be drilled almost to any size within reason without altering the elastic limit; but the moment the center of the hole is either above or below this center line the limit is altered and is liable to so weaken the frame as to cause it to crack. With the top or bottom member the nearer the hole is drilled to the center piece the less likelihood is there of materially altering the strength; but if a hole is drilled in the manner shown in Fig. 2 at *H*, quite near the edge, the strength is greatly impaired, and may result as in this case by the frame overstepping the elastic limit and cracking at a point where the strength is most needed. It will be noticed that just behind the hole *H* there is a rivet *R*, and likewise one just in front of it at *R1*. These rivets are placed as far over to the outside of the cross member as is possible to hold it secure on the side members, bearing out the contention above stated that it is better for the maker of the chassis to specify where the frame should be drilled than to leave it to a workman who, unless he is told to the contrary, will drill wherever it suits his purpose. The result of so drilling the frame of this particular automobile was that after it had been in use for some time it developed a crack. Luckily, owing to the fact that the clutch slipped excessively, an overhaul was decided upon and the crack *C*, although covered by the body, was discovered.

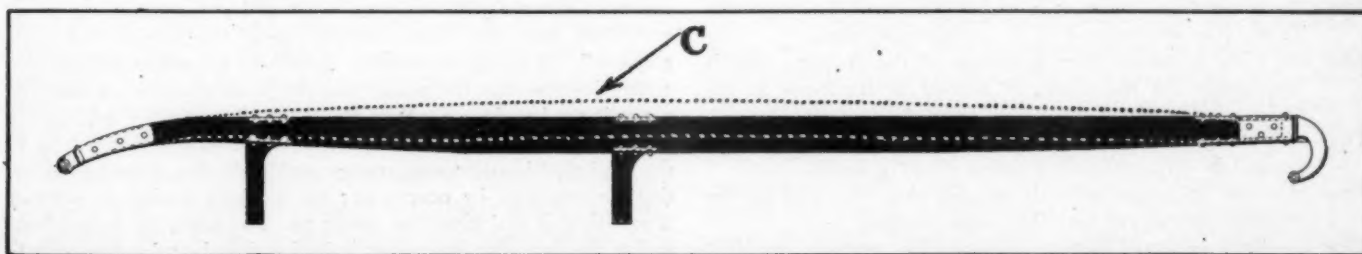


Fig. 4—Showing the method adopted by some makers in arching the chassis frame to compensate for initial letting down when the load comes on, taking advantage of the tensility of the under side of the member

## It Stands to Reason

## That Every Human Being Is a Puzzle That Must Be Solved to Obtain Success

That in a row of cakes on a baker's shelf, as in a row of men, some are over-sweet, more are bulging with fruit, and others are heavy as lead.

That exaggeration attaches to the tongue of some, the pocket-book of others, and to the importance of the most unwise.

That Nature fitted every man for something—hate is but a form of expression for the misfit.

That work is not hateful to the man who finds the undertaking that suits his capabilities.

That the man who finds himself soon finds work to do.

That as the eyes believe what they see, and the ears believe what others say, the senses respond to the touch of the plausible.

That a piece of beautiful Italian marble as a hearth-stone is blocking the way of a slab of ordinary granite, but the marble suffers the most.

That life is only a puzzle as long as its purpose remains unsolved.

That a man is a chemical compound, the ingredients of which must be known in order to ascertain the possible reactions.

That the chemicals are wasted in proportion as they are fettered by dross; find the right reactions and success will respond to the same whistle that makes a dog prick up his ears.

That confidence is imposed in proportion to ability shown—let ability peek out from behind the ramparts.

That conception is the great preliminary—things are never of greater proportion than they look as far as an undertaking is concerned.

That war is the maker of boundaries—trade is the sunlight that fades and dims the lines.

That history never yet justified an injustice.

That doing a thing wrong is the same as contracting for a double task.

That time may not pause long enough to allow a worker to perform a double duty.

That the creative mind is ever in grave conflict with surroundings.

That the constructive mind is likely to tear down as much as it builds up.

That the inventive mind may not show constructive scope.

That the destructive mind is too dangerous to be allowed to animate.

That the dormant mind is the lowest stage to which the ego is capable of sinking.

That the average mind is dominated by what goes on around the scene of action.

That things get into a snarl due to the lack of initiative of those who are manipulating the levers.

That the stereotyped man is the fellow who waits to be nudged before he does anything at all.

That the better way, if a task is to be performed, is discovered by the man who is soon to be the superintendent.

That the virile in man is the expression of the property that is responsible for the condition known as the head of the class.

That missionaries in Africa would starve to death were wearing apparel so cheap that every native could dress up.

That the cost of missionaries is greater than the cost of the clothing that would cure the whole disorder.

That missionaries would eschew clothing (for natives) should it be proposed to solve the problem with the money that it costs to keep the natives supplied with naked truth.

That this question is connected with the automobile—who ever heard of a man wanting an automobile, one who does not wear clothing?

That it is necessary to progress along conventional lines; the hurdle of civilization is too high to be jumped.

That the age of automobiles is the era of big hats; artificial champagne, theater speculators, and a propaganda for good roads.

That there is nothing to reform, but some of the scenes are holding the center of the stage for too long a time.

That in making up the bill of the play, the fellow who undertook the task had an exaggerated ego in one or two directions.

That delicate satire is a stranger to a blacksmith.

## What a Just Critic Says

It Is Pointed out That Technical Papers Have Too Much Carburetor Stuff and Too Little News

CONDUCTING a technical paper according to the man who reads it is a mere matter of putting all of the things in that readers express a preference for, leaving out all of the obviously irrelevant matter and going to press on time so that the paper will reach the reader at the very moment when he is sitting down to breakfast on reader's day. This idea is exactly right. There are only two obstacles in the way. The first hurdle to be jumped is of a most obstinate nature, i. e., what does the reader most desire to have laid upon the breakfast table in the form of his favorite technical journal? It may be considered strange, but there are very few readers who take the trouble to write to the editor and say: "I do not like what you are running; what I want is so and so!" The next trouble is to find an editor with sense enough to reconcile all of the statements that would be received were it true that readers would take the trouble to express a preference of one sort or another. In England, for illustration, it is a noteworthy fact that the readers of the various papers are very critical; they do write to the editor, and they do say what they think; moreover, be it said to their credit, most of them write when they have no axe to grind. In America, if it may be said, writing to the editor is a practice that is mostly indulged in when an axe is to be ground. There is no doubt of the fact that the technical papers are frequently off the track—bumping along the ties, so to say—and this is likely to be so for a long time to come unless readers can be induced to write to the editor and tell him wherein he is drifting. A very good way to handle this matter was taken advantage of a few days ago by an editor of a daily paper who wrote to the editor of THE AUTOMOBILE. He said: "I like your paper and you are making progress, but you are 'moss-covered' upon the subject of self-starters." There is no possible chance of an editor falling into a rage just because the reader has the good sense to see that the paper is not keeping pace with all of the phases of the art. If the criticism is in keeping with the facts, the editor is boosted up to the level that his own good sense would tell him, were he awake, that he ought to be occupying; but if the criticism is without foundation, it still gives the editor an opportunity to waken himself to the fact that the reader is half satisfied, and surely a little further effort along live lines will make the paper better and make the reader understand that he is being considered.



## What Shall We Do Now?

Promote Co-operation;  
Gather Statistics; Support the S. A. E.; Foster Good Roads; Encourage Equitable Legislation; Directly Control Contests; Avoid Over-Production; Induce Stability of Investment, and Make the Automobile an Economic Factor in the Affairs of Mankind

ACCORDING to the decision of the Circuit Court of Appeals for the Second District before Lacombe, Ward and Noyes, Circuit judges, referring to the last paragraph of the decision, and to Selden's choice, the learned court said: *"He made the wrong choice, and we cannot, by placing any forced construction upon the patent, or by straining the doctrine of equivalents, make another choice for him at the expense of these defendants, who neither legally nor morally owe him anything."*

"He made the wrong choice!" Have we not all made the wrong choice? Are we not doing some things that will have to be undone again? Is it not an opportune moment to "take bearings," locate our position on the sea of great happenings and "box the compass" accordingly? Having knocked upon the door of a wonderful new art, and having been bowed in by a most gracious host, it remains, does it not, to conduct ourselves, assuming the attitude of guests, remembering that we are of the assemblage, and that the more selfish a man proves to be the less will he have in the long run.

Generating opposition has but one relation to the building of good automobiles, and that relation is self-evident, the project is slowed down accordingly, and the results are poor indeed. We become the victims of opposition in its most relentless form when we do things that are not understood by those with whom we have to deal, either in the capacity of honorable competitor or ultimate purchaser. We must deal fairly with the ultimate purchaser, but this we cannot do if we sink to the level of cut-throats, trying by hook or by crook to reduce our honorable competitors to a state of bankruptcy, for then the product of the bankrupts that we make will be our anchors by which we shall be held to our assigned position in a sea of failure.

The man who builds automobiles has an honorable calling; he belongs in the vanguard of the onward march, but he becomes a straggler if he falls out of line, following the crippling of his resources, or he produces a straggler if he cripples the resources of another. When an army counts its strength the stragglers are not included, but there is a principle involved in industrial work, one, in fine, which does not obtain in military pursuits, and it is echoed by the statement that we are weakened not only by the stragglers in our own ranks, but also by the stragglers in the ranks of our competitors.

No man can afford to compete with the incompetent, and this being so it is not in the path of wisdom to help to create or to maintain incompetence. In the olden days it was the firm contention of the man who was strong that he should crush his competitor out of existence if possible, but out of gear with the times at all events. The fault in this doctrine was due to the fact that there was no way to amputate the rotten limb, and the gangrene which was set up infected the healthy flesh of industry as well as the crippled competitor.

### Remedy Does Not Lie in Undue Restrictions

When it was found that to waylay competition was to hold up the industry the leaders in the various arts contrived the unhappy expedient of combining for no better purpose than to eliminate competitors. The philosophy of success in the industries had not progressed so far as to shed pure cold light of the

unalterable facts to the four winds, but time and experience have proven to the satisfaction of the leaders among us that there are 90,000,000 of citizens in this commonwealth, and they must survive or perish together.

When we build an automobile we furnish the inducement, among other things, for the improvement of the roadway. The reason why cars are not exported to China lies in the fact that the "Yellow" Empire has no improved roads, but if it is true that the automobile will be made valuable only in the proportion that the roads are made good, does it not follow that the manufacturer of automobiles must become the advocate of good roads? While the opportunity affords, in view of the self-evident nature of the relation of the road to the car, it is suggested that there is a relation between the builder and his competitor, the builder and the user, and the builder to the commonwealth.

### It Is Suggested That an Association Has Duties

The instant reference is had to those relations which are more or less vague to the busy man, and unknown to the unthinking individual, it remains to observe that it should be the task of some competent body to discover the ramifications of these relations and to so catalog them that this portent will be an open book. If the A. L. A. M. has outlived its usefulness in a certain direction, and it probably has, it is but a sign that the association has passed through its apprentice degree, is wise to the ways of fellowship, and is free to practice in the glare of more light, with the understanding, however, that there shall be no undue restrictions.

### Energize Some of the Languishing Subdivisions

Such a great organization as the A. L. A. M., with its adequacy of smooth-running machinery, under the direction of its efficient management, can well afford to consider the advisability of broadening its scope through the good office of properly selected committees, sufficiently to render up assistance, not forgetting:

(A) That the Society of Automobile Engineers may increase its activity and broaden its usefulness in proportion as it is permitted to do so in the absence of biased influence or undue pressure, provided it is given the hearty support that the makers can well afford to extend, even to the point of co-operating in the accumulation of a suitable laboratory which should be dedicated to the industry as a whole, and operated under the direction of the society, although the makers' committee should be empowered to act for the makers in the making of suggestions and in the bearing of whatever burden the society might see fit to impose.

(B) That statistics should be gathered from every available quarter, and a bureau of information might be instituted under the control of a proper committee, is a reasonable proposition. These statistics, were they comprehensive and reliable, if placed at the disposal of the respective makers of automobiles would easily displace the services of at least one capable man in each plant, which, briefly stated, as a factor for economy, means that one man in a bureau of information would displace 99 out of 100 men in the plant; the information would be much more reliable and up to date; it would be collected progressively, and it would place all of the makers of automobiles on a basis of equality from this point of view.

(C) That the purchase of automobiles, for instance, by the United States Government for use in the Philippine Islands or elsewhere, as has been done, and that, too, by importation, is a clumsy affair that might have been avoided through the good office of a well-informed committee of the makers, sanctioned to collect information about the foreign as well as the home cars, and placing it at the disposal of the government representatives, who, through lack of information or for other reasons that should have been overcome, went abroad for the very automobiles that are to be had for the asking from makers at home.

(D) That information is not readily obtained by merchants who may be desirous of substituting the automobile for the horse-drawn vehicle, and it is more than likely that some form of contest or specific exhibition can be devised under the direction of a trained committee, through the workings of which merchants will be brought to a realization of the fact that they are not getting all that they can, and that automobile methods of delivering of goods are better in every way than those which they have so long adhered to.

(E) That output in the aggregate should be compared with the demand for automobiles, and that information in relation to these important matters should be collected and compiled so that every maker of automobiles would be in a position to order his materials on a conservative basis, fix upon the rate of delivery thereof to check up with his needs, and avoid the over-ordering of raw material, and the over-production of cars. A well-informed committee, dealing with the many angles of this particular phase of automobile building, would have a wider influence for stability than can be realized at the present time.

(F) That experience with the patent situation is far too costly and unsatisfactory to be tolerated any longer than necessity requires, and it would seem as if some reforms should be undertaken such as will inject a measure of stability into the patent office practice and warn inventors of the dangers which they are likely to encounter in a given case. Then there are the questions involving foreign patents, and a little attention to them from the point of view of reciprocity and from other angles should merit the attention of those who are best fit to unravel the tangle.

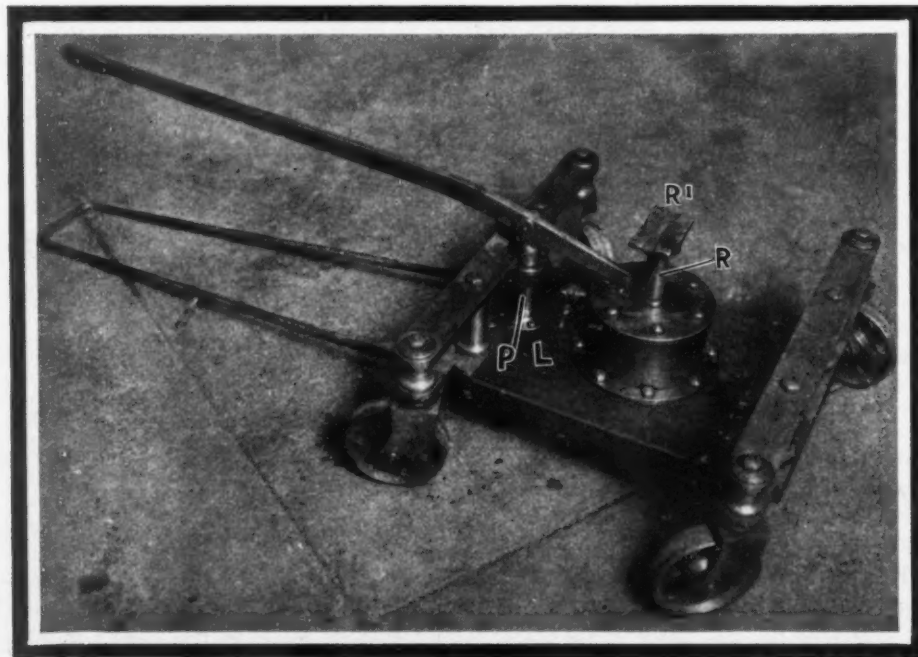
(G) That certain problems, too general in character to be reduced to specifications, are of such broad interest that a peculiar advantage lies in having them thrashed out on a common basis, and an executive committee of rare ability and great familiarity with the needs of the companies could make itself felt for the common good.

In thus briefly outlining a few of the matters which might well come under the supervision of an association, it is with the understanding that the independence of the members should in no way be infringed upon; the association, in its relation to the companies, should be passive. It is not believed that the members of an association should be required to do any of the things that might be regarded as wise by the directors of the association. It is in the difference between having information at hand and having to do the things that would seem to be wise from the viewpoint of an association's management that leads to conflict with the government. There is really no reason why there should be conflict of this sort, since the respective companies are free to follow the bent of their own will so long as it conforms to law, and the great point lies in the retention of this freedom.

## Garage Jack

Accessory Manufacturers Should Strike Out Into the Open for Ideas

WHEN a certain operation has frequently to be carried out in a factory it is necessary to have at hand such tools as suit the occasion to make the work as easy as possible. The instrument shown in the illustration represents a lifting jack. Both in the repair shop and in the garage cars have frequently to be manipulated in a space so limited that it is impossible to move the particular car without moving several others, unless the car to be moved can be transposed and its direction of running altered. Skates have been in use for some time, but they require the assistance of two men to expeditiously carry out the operation. With the jack here illustrated one man can raise the car in a few seconds without any more exertion than pumping about five or six strokes at a tire pump, and with the handle provided for the purpose the car can be wheeled about almost like a baby carriage. The principle on which the jack proper is operated is hydraulic. A plunger pump P is worked by the lever L, the length of which indicates the ease with which the pumping operation can be effected. A few strokes of the pump are sufficient to raise the lifting rod R, to which is attached the swivel rest R<sub>1</sub>, on which the axle is supported. Beneath the frame is a non-return valve, so that after the oil has raised the rod R the jack remains in this position till the lever L is turned, which allows the fluid to return to the reservoir and so lower the jack. This jack was designed and built by Neal Jewett, superintendent of the Harrolds Motor Car Company's repair department, 233-237 West Fifty-fourth street, New York.



Hydraulic garage jack by means of which a car can be lifted and wheeled to any position

- If the motor slows down on a grade—give it more gasoline.
- If the motor heats when it is running slow—advance the spark.
- If the radiator steams—avoid retarding the spark too much.
- If the motor misses—see if the battery is in good order.
- If the motor heats up—observe if the fan is doing its work.
- If the motor shuts down suddenly—look in the gasoline tank.
- If gasoline is in the tank in sufficient quantity look for carburetor trouble.
- If by priming the carburetor there is evidence of an ample supply of gasoline, readjust the carburetor to make the motor run as slowly as possible.
- If the motor is made to run slowly by adjusting the flow of gasoline, it must then be made to run fast by adjusting the auxiliary air valve.
- If the carburetion is all right it remains to look after the ignition system.



## American Cars Win in Australian Run

**S**YDNEY, N. S. W., Jan. 15—The only firm in Australia dealing exclusively in American cars is Roy W. Sanford, whose head offices are in Sydney, N. S. W. He has opened a branch depot in Melbourne, Vic., where he is going to push the Chalmers, Thomas, Empire, and Gramm wagons.

Mr. Sanford has very recently returned from his second trip to America, where he fixed up the agency contract for the Chalmers. Only two years ago he introduced the Cadillac and the business he has done with American cars during 1910 has nearly equaled that of any agent for European cars.

The Tarrant Motor Co. of Melbourne, Vic., have done a remarkable business in Fords and their order for 1911 Fords is probably the largest order sent from Australia for any individual make of car. Another Melbourne agent who is doing a good business in American cars is Ernest H. James, who is selling the White steam and gasoline cars. Mr. James is also agent for the British car Swift. Since the French and British makers have adopted the long stroke in their engines the average Australian has got an impression that American makers are still behind in their designs, and it is often discussed here that if the American manufacturers adopted the longer stroke and smaller bore their cars would be ideal, especially as they are much lighter in weight than any French car. Such a type of engine would suit the formula for horsepower rating to a better advantage and would then show up better in hill climbs.

Owing to the small population of Australia the attempt at manufacturing cars has never been properly gone into, but Henry Vale, engineer of Auburn, near Sydney, has laid down a good plant for the manufacture of commercial wagons and will probably make a success of it. Mr. Vale has been for years past making all kinds of engines, both stationary and railroad, also railway cars, trucks, etc., and his workshop is one of the largest in Australia. In order to suit our hard but rough, stony roads the heavier wagons may be fitted with steel tires, as well as rubber tires, but it is certain buyers will give preference to the steel tires and be satisfied with a little less speed.

American makers who hope to do business in this country might bear this point in mind, especially as there are several English wagons out here with steel tires.

The latest importation from America is the Hudson, and although it has only been here a few days its appearance has caused it to be highly spoken of. Another fine example of American manufacture is the Mitchell, the latest model of which has only been here a few weeks.

During the last few months all the garages in Australia, with the exception of those that just started business, have been raided by customs officials and books and stocks have been seized, but in most instances the stocks have been released. The chief trouble is over the valuation that has been placed on tires and bodies, and the customs allege that the prices of the chassis have inflated, while the value of tires and bodies have been reduced, in order to save import duty.

In Australia the import duty on cars is: Chassis, without tires, British made, free; foreign manufacture, 5 per cent. ad valorem. Tires and bodies are subjected to a 25 per cent. duty for British goods and 30 per cent. for foreign goods. In the event of complete cars being imported the importer has to submit statements showing the value of the chassis, body and tires separately and then pay the necessary duty.

Up to the time of writing only two prosecutions have come off and the principal offender has been the Kellow Motor Co., of Melbourne, fined nearly £2,000 (\$10,000) as well as costs.

The situation of the trade generally is very good, and although garages are getting plentiful they all seem to do good business and no agent seems to be overstocked.

The Australian market is to a very great extent controlled by the Olympia show, held in London every November, and the

cars which are exhibited at Olympia and fully described in the leading English motor journals decide many a purchaser upon which car to get. Now that the details of Olympia are all to hand, many people seem to think that the American invasion is only talk, and this is due chiefly to the fact that very few American cars were exhibited at this year's automobile exhibition at Olympia.

To the Australian in general such shows as the Paris Salon and New York seem to be of minor importance, which is due to the lack of interest the English journals take, and this being the case the American cars on the whole are never introduced to the Australian public; but in spite of all this they are now taking on remarkably well, where they have been introduced by local agents.

Trials and tests in Australia are few and in many cases no great importance is attached to them. Especially a hill climb or a consumption test, as in these instances, only one quality of a car is being tested; but reliability trials do draw attention. In most reliability trials all stops (except tires) are penalized and the fuel consumption takes a prominent part.

The Tasmanian Automobile Club has just held its fourth annual contest and for the first time in Australia a few cars of American manufacture were entered and they came out prominently. As is the custom in Australia the contest was divided into four classes, viz.: Single cylinder class, two cylinder class, four cylinder class and 20 horsepower and over class. To decide the winner of the contest a decision is arrived at similar to that used in the Scottish trials in Great Britain.

In the contest just mentioned the winner proved to be a 25-30 horsepower Cadillac. As regards reliability very few cars were penalized, but the fuel consumption, which was worked out on a formula, decided the winner and averaged nearly 26 miles per gallon, over a hilly course of 244 miles. The single cylinder class was also won by a 10 horsepower Cadillac. The two cylinder class was won by the 25-30 Cadillac and a 20 horsepower Ford second.

Appended is the full list of competing cars and their order of merit. The maximum points awarded were 100 for petrol and 1000 for reliability. The figures in the Applegate trophy worked out in a somewhat remarkable manner, as only decimal points separated the three placed cars. The points allotted were:

### THE APPLGATE TROPHY

	Pet.	Reli.	Total
Charles Saul, 25-30 Cadillac.....	100	1000	1100
S. Nicholls, 12 Talbot.....	99.8	1070	1099.8
Geo. M. Jackson, 15 Austin.....	99.6	1000	1099.6

### THE DUNLOP TROPHIES

#### Class A

Dr. C. Parker, 10 Cadillac.....	100	1000	1100
S. Spurling, Jr., 8 De Dion.....	65.5	1070	1065.5

#### Class B

C. F. Monds, 8-9 Renault.....	100	1000	1100
H. W. Lee, 8-9 Renault.....	84	1000	1084
Edis Brown, 8-9 Singer.....	78	990	1068

#### Class C

S. Nicholls, 12 Talbot.....	100	1000	1100
G. M. Jackson, 15 Austin.....	99.9	1000	1099.9
G. D. Gleadow, 12-14 De Dion.....	94	1000	1094
C. M. Dyer, 8-12 Clement-Bayard.....	92.9	1000	1092.9
C. E. Webster, 11-16 Clement-Bayard.....	83.4	1000	1083.4
A. K. Applegate, 10-12 Humber.....	84	1000	1084
William Gibson, 18 Franklin.....	76	1000	1076
Charles Saul, 14-18 B.S.A.....	75	1000	1075
Charles Bourke, 14-16 Argyll.....	66	1000	1066
J. H. von Alwyn, 8-12 F.N.....	59	1000	1059
E. W. Gibson, 12 Franklin.....	54	883	937
P. O. Fysh, 14-16 Argyll.....	50	990	1040

#### Class D.—Continental Shield—For Cars Over 20 H. P.

Charles Saul, 25-30 Cadillac.....	100	1000	1100
E. Fordyce, 20 Ford.....	80.4	1000	1080.4
J. H. Hart, 28 Minerva.....	62.8	1700	1062.8
J. Granter (Vic.), 20 Italia.....	48.4	1000	1048.4
C. E. Hall, 20 Hupmobile.....	51.4	990	1041.4

## Concerning the Colby Car Some Timely Information as to the Characteristics and Make-up of the 1911 Models of the Colby Motor Company.

THE motor is an Excelsior of the four-cylinder, vertical, four-cycle type, with the cylinders cast in pairs. The bore is 4 1-8 and the stroke 5 1-4 inches. The cylinder heads are cast L-shape, permitting the valves to be all on one side. The adjoining intake chambers are connected, thus simplifying the intake manifold, which is placed above the cylinders. The manner in which this is carried out will be seen in Fig. 7.

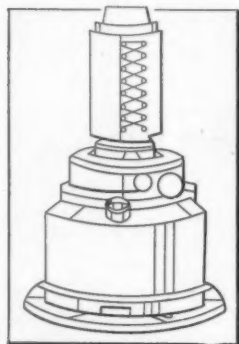


Fig. 5—Multiple-disc clutch, with centrally located engaging spring

The valves are interchangeable and the dimensions are: Diameter, 1 7-8 inches, with a lift of 5-16 inch. The pistons are very long, the object being to reduce wear, and four rings of the eccentric type are fitted above the wrist pin.

The distribution gears are made from drop forgings and are cut spiral, running in long phosphor-bronze bushings. The valve lifters are fitted with adjusters to take up any play in the valve mechanism. The crankcase is of aluminum split into two halves housing the crankshaft, which is machined from a drop forging and carried in three main bearings. The forward bearing is 1 5-8

inches in diameter and 3 1-2 inches in length; the center bearing, 1 5-8 inches diameter and 2 3-4 inches long, and the rear next the flywheel, 2 inches in diameter and 4 inches in length.

The lubrication of the motor is effected by means of a pump driven by worm gear off the rear end of the camshaft, as shown in Figs. 2 and 7. A sump with a carrying capacity of two and one-half gallons is situated in the lower half of the base chamber wherein the pump is situated. The oil is picked up by the pump, which delivers it to the main bearings under pressure, and from there it is carried through channels in the crankshaft to the big end bearings of the connecting rods. These latter are fitted with scoops which pick up the oil in the troughs and deliver the lubricant to wrist pins and cylinder walls by splash.

The cooling is effected by means of a centrifugal pump sit-

uated on the right side of the motor. On the pump shaft there is a pulley wheel which drives the fan through a flat leather belt. The tubular radiator is located over the front axle.

The Stromberg carbureter is situated on the same side of the motor as the pump, the manifold passing between the cylinders to the main intake pipe over the cylinder heads. The exhaust manifold is formed by a single casting secured to the four exhaust ports. The current is furnished by an Eisemann magneto of the dual type situated on the left side of the motor, the wires to the plugs being carried in a brass tube enclosing them and excluding dirt and oil from the insulation. The starting handle is carried in an extension of the crankcase, which forms part of the front timing gearcase cover. The clutch is of the multiple-disc type, the discs being all made of steel and dished. The housing as shown in Fig. 5 is oil tight and the plates are continually running in oil. The clutch has been designed to relieve the engine bearings from thrust, and to effect this the engaging spring is centrally located with an easy adjustment. The releasing collar is of large section and is provided with a ball thrust bearing. Behind the clutch there is a compensating joint which is covered with a gaiter acting as a means of holding the lubricant and excluding dirt from the working parts. The transmission is of the sliding gear selective type providing for three forward speeds and reverse. The actuating lever is placed at the right of the driver and works in a quadrant. The shafts are

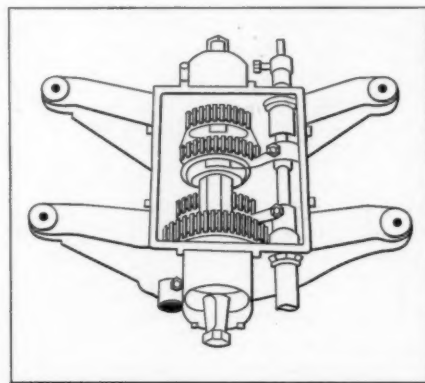


Fig. 3—Transmission of the sliding gear selective type

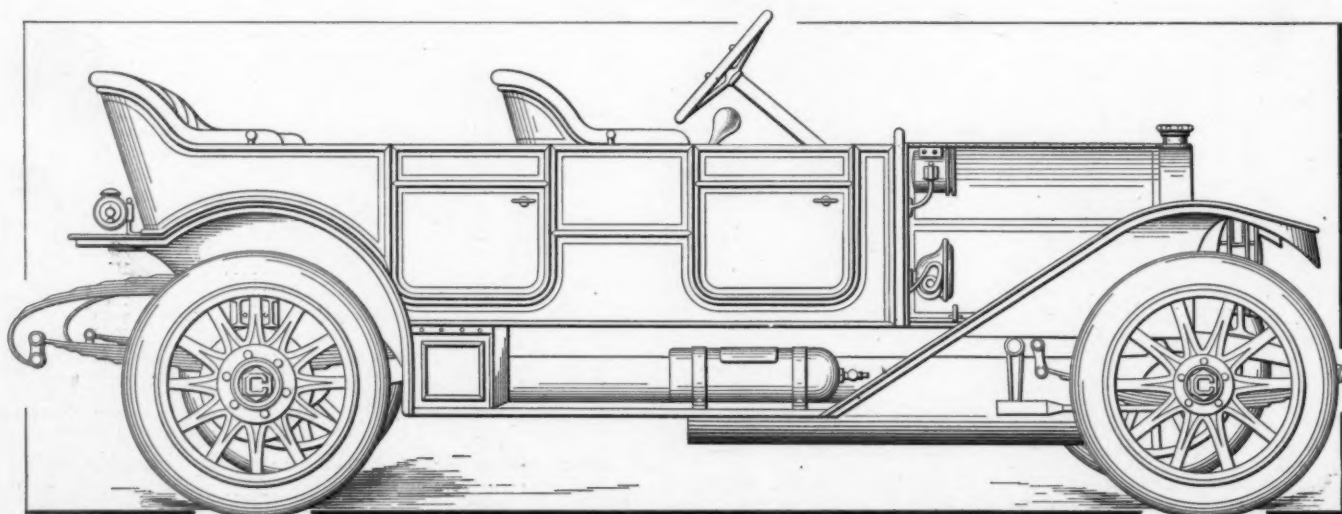


Fig. 1—The Model "H" five-passenger, 25-40 horsepower Colby touring car with fore-door straight-line body



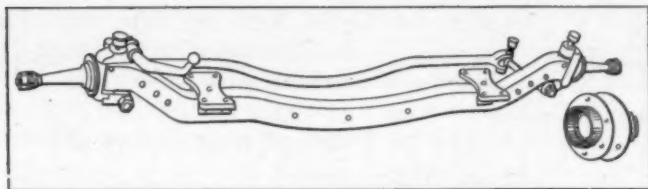


Fig. 4—Showing the front axle of the pressed steel type

placed vertical one over the other, the sliding gears being situated on the top shaft, the top speed engagement being effected by jaw clutches. The shafts, both main and lay, run on F. & S. ball bearings of the annular type, there being six bearings in all. As above stated, a full universal joint running in grease is provided between the clutch and gear box, and at the rear there is another universal joint housed by the ball end of the torsion tube surrounding the propeller shaft, which, owing to the upswept frame,

is brought into a horizontal line, throwing as little wear as possible on the universal joint.

The rear axle is of the full floating type, the differential housing being constructed entirely of pressed steel riveted and welded and spherical in shape. The rear cover is at-

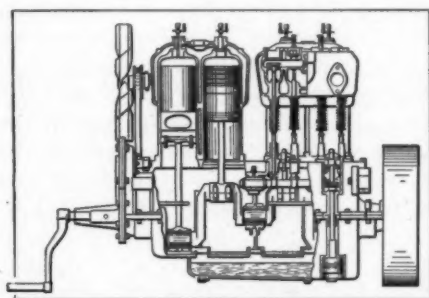


Fig. 2—Cross section of the motor, showing the relation of the component parts

tached to the main body by one bolt, allowing quick removal for inspection and lubrication. Through the opening formed by the removal of the cover the differential can be withdrawn without interfering with the axle fittings. Both brakes are situated, as will be seen by referring to Fig. 6, within the rear wheel brake drums, the actuating levers are also shown attached to the axle end of the propeller shaft and two rods are attached to the axle.

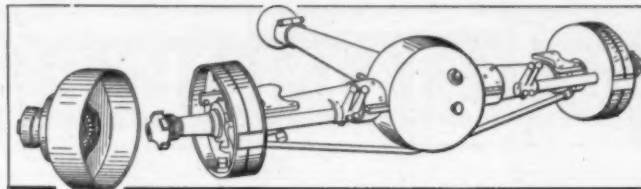


Fig. 6—Rear axle, showing ball-shaped differential housing and brake details

The front axle is of the pressed steel box type, riveted and reinforced, and combines strength with lightness. The knuckle pins are hardened and ground to size and operate in steel bushings. The wheels run on ball bearings and ample size grease cups are provided for all connections. Care has been exercised in the locating of the grease cups, and the mechanisms are protected from foreign accumulations.

The frame is of pressed steel, upswept at the rear and the suspension is by semi-elliptic springs for the front and three-quarter elliptic scroll springs for the rear. The steering gear is worm-and-sector type, the control being actuated by a hand lever on the steering wheel. Equal size wheels are fitted front and rear, shod with 36

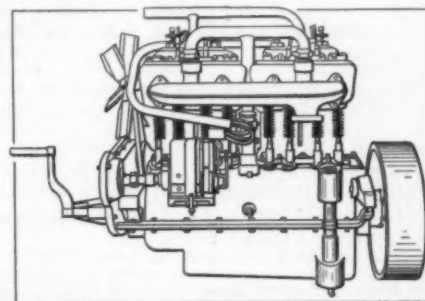


Fig. 7—Left side of the motor, showing all the valves on one side and operated by a single camshaft.

x 4-inch tires. The wheelbase is 121 inches, the tread standard.

The motor is rated as 35-40 horsepower. The car with a fore-door touring body, as shown in Fig. 1, sells for \$1,750, f. o. b. factory, and is known as Model H. Model G, with fore-door tourabout body, large cylindrical gasoline tank and provision for tools and tire carrier, sells for the same figure. The Colby Motor Co., Mason City, Iowa, are the makers.

## Coming Events

Catalogue of Future Happenings in the Automobile World That Will Help the Reader Keep His Dates Straight—Shows, Annual Meetings and Other Fixtures

- |                    |  |                    |  |
|--------------------|--|--------------------|--|
| Feb. 18-25.....    | Minneapolis, Minn., Annual Show, Minneapolis Automobile Show Association, National Guard Armory.         | Feb. 25-Mar. 4.... | Harrisburg, Pa., Second Annual Show, Automobile Dealers' Association of Harrisburg, Third Street Car Barns.  |
| Feb. 18-25.....    | Brooklyn, N. Y., Annual Show, Brooklyn Motor Vehicle Dealers' Association, 23d Regt. Armory.             | Feb. 28-Mar. 4.... | Sioux City, Iowa, Second Annual Show, Sioux City Automobile Dealers' Association, Auditorium.  |
| Feb. 18-25.....    | Binghamton, N. Y., Second Annual Show, Binghamton Automobile Club and Chamber of Commerce, State Armory. | Mar. 4-11.....     | Boston, Mechanics' Building, Ninth Annual Show, Licensed Automobile Dealers' Association.  |
| Feb. 18-25.....    | Newark, N. J., Fourth Annual Show, New Jersey Automobile Exhibition Co.                                  | Mar. 4-11.....     | San Francisco, Cal., Annual Show, San Francisco Motor Club.  |
| Feb. 18-25.....    | Albany, N. Y., Annual Show, Albany Automobile Association, State Armory.                                 | Mar. 7-11.....     | Des Moines, Ia., Third Annual Show, Des Moines Automobile Dealers' Association, Coliseum.  |
| Feb. 18-Mar. 4.... | Cleveland, O., Annual Show, Cleveland Automobile Show Company.   | Mar. 14-18.....    | Syracuse, N. Y., Third Annual Show, Syracuse Automobile Dealers' Association, State Armory.  |
| Feb. 20-25.....    | Cincinnati, O., Annual Show, Cincinnati Automobile Dealers' Association.                                 | Mar. 14-18.....    | Denver, Col., Annual Automobile Show, Management Motor Field, Colorado Auditorium.   |
| Feb. 20-25.....    | Portland, Me., Sixth Annual Show, Auditorium.  | Mar. 15-18.....    | Louisville, Ky., Annual Show, Louisville Automobile Dealers' Association, First Regiment Armory.   |
| Feb. 20-26.....    | Omaha, Neb., Annual Show, Omaha Automobile Association.  | Mar. 18-25.....    | Pittsburg, Annual Show, Pittsburg Auto Show Association (Inc.), Exposition Hall.   |
| Feb. 20-25.....    | Hartford, Conn., Fourth Annual Show, Hartford Automobile Dealers' Association, Foot Guards Armory.       | Mar. 25-Apr. 1...  | Buffalo, N. Y., Fourth Power Boat and Sportsmen's Show, Sixty-fifth Regiment Arsenal, Buffalo Launch Club.   |
| Feb. 21-25.....    | Baltimore, Md., Annual Show, Automobile Club of Maryland, Fifth Regiment Armory.                         | Mar. 25-Apr. 8...  | Pittsburg, Fifth Annual Show, Duquesne Garden, First Week, Pleasure Cars; Second Week, Commercial Trucks, Automobile Dealers' Association of Pittsburg, Inc. |
| Feb. 24-27.....    | New Orleans, La., Annual Show, New Orleans Automobile Club.  | Apr. 1-8.....      | Montreal, Can., Automobile and Motor Boat Show, Automobile and Aero Club of Canada.  |
| Feb. 25-Mar. 4.... | Toronto, Ont., Automobile Show, Ontario Motor League.  |                    |  |
| Feb. 25-Mar. 4.... | Kansas City, Mo., Fifth Annual Show, Kansas City Automobile Dealers' Association, Convention Hall.       |                    |  |

# THE AUTOMOBILE

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No. 8

## THE CLASS JOURNAL COMPANY

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**M**OST men when they get an idea continue to harbor the same for a long time after the value of the question involved can be counted. It was this way during the panic of three or four years ago. For a twelve-month after the panic business men and others continued to harp on the same old string, which merely went to show that they were only half awake. A canvass of the trade conditions along "Automobile Row," New York, which was made by THE AUTOMOBILE within a day or two for the purpose of finding out how customers are taking the 1911 automobiles, disclosed marvelous activity; in every place where the representative went in quest of information he found the salesmen busy with prospectives, and the management engrossed in the higher affairs involved. Some of this new business may be traced directly to the better understanding of merchants who have goods to deliver and who are in quest of modern facilities. But there are a large number of prospectives who are not only looking into the qualities of the new passenger automobiles, but are placing their orders for early Spring delivery; moreover, it would seem, the demand is for good cars, and price seems to be a secondary consideration. It was thought at first that the activity noticed was brought about by the pressing need for town cars for Winter service, but a further investigation, with a view to casting light upon this phase of the subject, resulted in the conclusion that orders for Spring deliveries are being placed. Indications are in the direction of more actual buying and less talk.

**B**ROOKLYN is holding its first regularly organized automobile show in the Twenty-third Regiment, N. G. S. N. Y., Armory, which is the largest building of its kind in the United States, despite which fact, the Armory is comfortably filled with the various makes of automobiles, and the Brooklyn dealers have done themselves proud, not only in the presentation of their products under the most favorable conditions, but in the matter of the handling of the enterprise, with the result that the Brooklyn buying public has evidently decided to support "home industry." On the opening night, when over 10,000 people graced the Armory by their presence, the casual observer would have said that it was a big crowd, but the Brooklynite of some discrimination would see in this assembly the staid citizens of old Brooklyn, numbering among them a considerable percentage of those who never patronize any place unless it is up to a certain standard, and is worthy of serious consideration. The Brooklyn automobile show will pass into history as a "society" event, and it marks the turn of affairs, indicating that the automobilist "across the bridge" has decided that he will fare better among his friends in the trade than he will elsewhere. Trade in Brooklyn has the same strong trend as was reported for New York last week, and a canvass of the situation there seems to indicate also that the buying public is willing to pay a reasonable price for an unquestionably good article. Beyond this, buyers are partial to fore-door types of body work, and the better grade of accessories.

\* \* \*

**W**ASHINGTON is the scene of activity along lines involving "good roads," and H. R. 25333, in other words, the Highway Commission bill, is before the Committee on Agriculture, and hearings are being given. From indications thus far, it would seem that the committee gathers the impression that there would be "too many fish in the pan" under the conditions of this bill, and it would be a small surprise to an onlooker were the committee to reach the conclusion that the good road work which is now being done under the direction of Doctor Logan W. Page, Chief of the Office of Public Roads, should be continued uninterruptedly, with an arrangement with Congress whereby the activities of the Office of Public Roads might be extended so that the Post Office Department and the General Staff of the Army would be placed in a position to benefit suitably for their needs. That "too many cooks would spoil the broth" is the gist of the present situation, and there is just the chance that a few more commissioners would draw large salaries, which would be more than equaled by their expense accounts, and the Office of Public Roads would have its activities slowed down to the extent that these commissioners might get it into their heads that they ought to earn their stipends, not by any building of roads, but by process of interfering with road builders. This country needs good roads; moreover, there should be a unifying process; in other words, the scientific methods that are found to be good in one State ought to be good in another, and it is self-evident that the cost of finding out what constitutes a well-made road should not have to be borne as many times as there are States. The Office of Public Roads should be able to dispose of this matter, nor is there any reason why Congress should hesitate in the issuing of the direct mandate.



## News Section

### Happenings of the Week in Various Parts of the Country as Gathered by the 85 Special Writers and Correspondents of "The Automobile"

*Contest Board issues its definition and classification of stock cars—Glidden Tour may be from Washington to Ottawa and include hill-climb feature—Climax of the American show season finds exhibitions at a dozen prominent points, including Grand Rapids, Minneapolis, St. Louis, Cincinnati, Cleveland, Hartford, Albany, Baltimore and at Brooklyn and Newark, N. J.—News of the trade from all directions.*

## Automobile Row Busy from End to End

ALL motordom is buying a new car and Automobile Row is about the busiest section of New York. Men who never have owned an automobile are in the market and those who are at present numbered in the ranks of the owners are looking for new cars. This makes trade delightfully lively for the dealers, particularly when it is contrasted with the conditions of one year ago when so much was expected.

Last year's trade was record-breaking in volume, but it was a disappointment to the dealers because it was not so large as expected by them. This year, conservatism marked their preparations for the season and the demand has been considerably larger than they looked for. It is actually somewhat larger, but it seems much greater because the ideas of the dealers were based to a certain extent upon the mistakes of 1910.

Every establishment that sells automobiles in New York has been besieged with inquiries this month. Actual sales so far are between nine and ten per cent. greater and the buying tendency seems to be exerted along the whole line of offerings. If anything, the big cars show the most emphatic gains and the fact is quite apparent that the public is buying the best cars it can afford. All the stores report inquiries from men who so far do not own cars, indicating that the industry is reaching out into a field of buyers that has not been a factor hitherto.

The recent show season did much toward stimulating business and a part of the trade that has developed is the result of work done during the displays. It is a notable fact that the agencies arranged during the shows have placed larger orders than ever before in certain sections. New Hampshire, Vermont and nearby territories in which the automobile is not so familiar as it is in New York have been specially liberal in their orders. This class of trade is almost exclusively for well-tried lines of moderate price and the convertible body cars are also in sharp demand in rural sections.

With a favorable Spring, from the weather viewpoint, the dealers all seem to think that they will dispose of their full allotment in jig-time and the impression is widespread that there will be a shortage in new automobiles before the season is closed. In this fact, they think they see the solution of the second-hand car problem that has attained such a size and significance as to be regarded as almost a menace to the trade. The dealers believe that when their new cars are all disposed of they will have a chance to move the surplus of second-hand cars taken in trade.

The trouble with the second-hand car situation is not that the dealers object to taking the cars in trade, but as to the basis upon which they must take them. So far the local dealers' association has been chary of promulgating any fixed rule on the subject, but individuals seem to hold the opinion that an equitable basis can be arranged. Even as early as this in the selling season some inquiry for used cars is being felt.

Summed up, the local trade has a healthy, lively tone and is a good shade better than last year.

## Plans Foreshadow Great Contest Year

While the Manufacturers' Contest Association recently declared against holding any more Glidden tours, the annual road reliability event will undoubtedly be run, even if its name be changed. The Glidden tour of 1911, or its equivalent, will probably be laid out from Washington to Ottawa, about 1,000 miles. According to tentative plans this will be run in seven days and may have a hill-climbing feature injected into it by way of variety.

Chairman S. M. Butler of the Contest Board in discussing plans for the annual event said that several routes were being considered. In addition to the Washington-Ottawa route, he said that there had been some talk about carrying the tour past Ottawa and swinging it South and West from that city, along the north shore of Lake Erie to Toronto, thus traversing the richest portion of Canada.

He suggested that the tour be called "The Reciprocity Run."

The representative of the Contest Board who is now visiting various factories to stir up interest in a Grand Circuit and for contest work generally says that 100 entries for such a tour could be secured easily. So far he has visited the manufacturers at Indianapolis, Moline and Racine and will now go to Detroit. He has reported that the Grand Circuit idea has taken well with the Western makers.

Chairman Butler says that even if it should prove impossible to adopt the idea of a special train to convey the racing cars and teams and officials from place to place on the Grand Circuit, an arrangement of dates so that the contests can be held in series will undoubtedly be made. He is sanguine, however, that the more elaborate plan can be worked out satisfactorily and an attempt will be made to iron out the details.

## California Road Race Season Opens

Automobile road racing season will open Wednesday in California if the much postponed Panama-Pacific race, which used to be called the Portola, is run. The race has been announced and postponed several times. The entries are said to include two Nationals, two Pope-Hartfords, two Maxwells, Simplex, Lozier, Fiat, Speedwell, Corbin, Apperson, Mercer and Only.

The main event will be the St. Francis Hotel cup race, fourteen times around the course, which is 10.9 miles, under piston displacement rules. The race will be preceded by a contest for light cars and will be followed by one for free-for-all cars. The light car race will be nine circuits and the final event nineteen rounds.

## The Winter's Activities in the Middle West

**G**RAND RAPIDS, MICH., Feb. 20—Over 100 automobiles, representing the whole scope of the manufacturer's art, constituted the main features of the display at the second annual automobile show. The exhibition was far and away superior to that of last year and was patronized by nearly 100 per cent. more visitors.

The show was held in the Klingmann Furniture Exhibition building, which was elaborately decorated for the occasion. It opened February 15 and remained in session until Saturday night.

The list of car exhibitors was as follows:

Oswald Motor and Supply Company, six cars, one Baker electric, four Kissel Kars, one Whiting.  
 Moran Auto Sales Company, eight cars, seven Maxwells and one Columbia limousine.  
 Buick Motor Company, seven cars.  
 White Motor Car Company, seven cars, three White cars, including one steam car and four Hudsons.  
 Becker Auto Company, four cars, all Fords.  
 T. J. Bettes, five cars, Hupmobile touring car and Hupp-Yeats electric.  
 Grand Rapids Overland Company, full line of seven cars.  
 Stanley A. Dwight, eight cars, Brush runabout, Brush light delivery car, Corbin and Everitt.  
 Mitchell Agency, three cars, Mitchells.  
 Riley Auto Co., three cars, E-M-F.  
 Adams & Hart, five cars, Oakland, Rauch-Lang electric and three Franklins.  
 W. D. Vandecar, nine cars, three Stoddard-Daytons, five Reos and one Owen touring car.  
 Austin Automobile Company, three Austin touring cars.  
 Elmore Auto Sales Company, two cars, Elmore touring.  
 Palmer Sales Company, two, a Peerless touring car and limousine.  
 W. S. Farrant, four cars, three Chalmers models and a Columbus electric.  
 D. C. Rieckse Auto Company, five cars, three Cutting models and a pair of Cartercars.  
 Central Auto Company, three Cadillacs and a Waverly electric.  
 Fred Z. Pantlind, three cars, two Oldsmobiles and one Lozier.  
 Sterling Auto Sales Co., four, three Sterlings and one Crow touring car.  
 International Harvester Co., three, a touring car, commercial car and freight wagon chassis.  
 The Ignition Starter Company has an exhibit of one car in connection with demonstration.

### Grand Rapids Trade Organizes

GRAND RAPIDS, MICH., Feb. 20—For the purpose of establishing closer social relations among men of mutual business interests and to further measures for their common good, the leading automobile agents of this city have organized the Grand Rapids Automobile Dealers' Association.

The membership now numbers twenty, representing that number of garages or sales places and agencies for two or three times that number of lines of motor vehicles, while the applications of a number of others are in, awaiting action at the next meeting. The executive cabinet is as follows: President, C. J. Bronson; vice-president, Phillip Moran; secretary, R. E. Becker; treasurer, Fred Z. Pantlind.



Fig. 1—Looking across the Grand Rapids show building, with the Austin in the foreground, Cutting and Cartercar to the rear, presented by the D. C. Rieckse Company. All in good company and pleasant prospects

Until a permanent headquarters, for which a committee composed of Phillip Moran, R. E. Becker and Fred Z. Pantlind is now scouting, can be secured, monthly business meetings will be held at the Hotel Pantlind.

### New Show Mark at Minneapolis

MINNEAPOLIS, MINN., Feb. 20—Minneapolis' fourth annual automobile show threw open its doors at the National Guard Armory Saturday afternoon to give the public of the Northwest a view of the largest and most lavishly decorated exhibition in the history of the Automobile Show Association of the Minnesota metropolis.

On exhibition are sixty-three makes of cars, represented by Twin City dealers, one or two Chicago and New York firms and a few from neighboring towns. These dealers number forty-eight.

Conspicuous at the show this year is the material increase of the number of commercial trucks.

The rapid advance made by the electric vehicle in the past year looms up at the show. Distance, speed and durability are being talked by the competitors.

In the balcony may be found the exhibits of practically every accessory known to the automobile world.

Among the companies exhibiting are: Locomobile, various types from the New York show; Abbott-Detroit, Hupp-Yeats, electrics; Auburn, Studebaker, electric and gasoline; Stearns, Schurmeier, Wilcox, trucks and touring cars; Veerac, trucks and delivery cars; Halladay, International, Jackson, Packard, Parry, Kissel Kar, Brush, Avery, trucks; Chalmers, Thomas, Columbus,



Fig. 2—In the main aisle, with Stanley A. Dwight, showing the Brush, Corbin and Everitt cars, with other makes in view, including a setting that was the wonder of the patrons.

electrics; Mora, Case, Cutting, Velie, Rambler, Colby, Rauch-Lang electrics; Marmon, Reo, American roadsters, Ohio electrics, Staver, Herreshoff, Luverne, Mitchell, Ford, Cadillac, Grabowsky trucks; Winton, Buick, Pierce-Arrow, Oldsmobile, Franklin, Alco, White, steam and gasoline; Hupmobile and others. The show made a hit with the folks who graced the armory.

### Packard and Regal Changes

DETROIT, Feb. 20—Changes in the personnel of the department heads at two local factories have been announced. At the Packard Motor Car Co. H. H. Hills, former assistant sales manager, succeeds to the position left vacant by the resignation of sales manager Chalfont, who goes to Buffalo as the president of the reorganized Thomas Co. C. F. Tollzien, assistant purchasing



agent, now heads his department in place of F. R. Humpage, who has also joined the Thomas staff. F. R. Robinson becomes auditor of the company, and E. F. Roberts, general superintendent. The last two replace respectively J. J. Ramsay and W. L. Gleason, who have also accepted important positions in the Thomas reorganization.

All the new appointments were merely promotions, the men receiving them having been for various periods, the assistants of the men who have resigned.

The Regal Motor Car Co. announces the promotion of George D. Wilcox from sales manager to assistant general manager. Mr. Wilcox will retain the general direction of sales. Assistant to General Manager Haynes will be J. C. Austin, who will be in immediate charge of the mechanical department. F. L. Pierce, formerly branch manager of the Regal store in Cleveland, joins the factory staff as sales manager. A new systematization of the district sales organization has also taken place, managers being appointed as follows:

Boston, A. W. Mutt; New York, George T. Gould; Philadelphia, Guy Mattison; Buffalo, F. G. Hood; Cleveland, L. B.



Fig. 3—General view of the display with the Grand Rapids Overland Company, showing the Overland line in the foreground and Whiting, Ford, Hupmobile, Mitchell, Oakland, Franklin, Reo and Owen, Elmore, Peerless, Chalmers, Cadillac, Lozier, Crow and others near.

Moore; Atlanta, H. W. Anderson; Chicago, Ralph Schmidtdiel; Indianapolis, H. P. Hickey; Kansas City, J. A. Munroe; Lincoln, C. J. Bates; Minneapolis, T. F. Thiel; California, Bert S. Bingham.

Warehouses have been established at all these points.

### Truck Run to Start Here

CHICAGO, Feb. 20—Instead of running its commercial vehicle test from Chicago to New York as first intended the Chicago Motor Club at a meeting of its contest committee Thursday decided to reverse the route and have the start from New York City, it being the belief that by coming this way the event would be of more general good to the truck manufacturers.

The contest committee also went on record as determining to promote the contest despite some of the adverse criticisms that were heard during the show. While the blanks are not out as yet, there are four or five tentative entries in sight, including the Alden Sampson, Alco, Morgan, Sauer and DeDion. In all probability the Alden Sampson people will put in their road train in addition to a couple of trucks.

### News of Montreal Motordom

MONTREAL, Feb. 20—The management of the Montreal Automobile and Motor Boat Show announces that owing to the demand for a larger show building and earlier dates it has been necessary to arrange for the Drill Shed, the show to be held

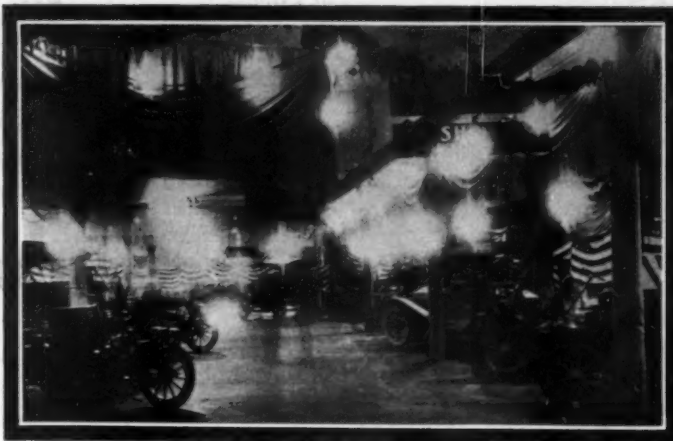


Fig. 4—General view, with the Riley Auto Company, showing E-M-F and Flanders "20," with Studebaker, KisselKar, Hudson, White, Hupp-Yeats (electric), Rauch & Lang (electric), Columbus (electric), Sterling, Waverley (electric) and Moran Auto Sales Company, showing Columbia and Maxwell.

March 18 to 25. With the numerous exhibits of pleasure cars, commercial vehicles, motor boats, accessories and aeroplanes as well as the exhibition of military vehicles, this year's show, which is again being held under the auspices of the Automobile and Aero Club of Canada, promises to surpass anything of the kind ever seen in Montreal.

The Gramm Motor Truck Company of Canada, Ltd., has been incorporated with head office and factory in Walkerville, Ont.

The Canadian Commercial Motor Car Company, Ltd., Windsor, Ont., has commenced the manufacture of commercial cars. It is strictly a Canadian car built by Canadians in Canada for Canadians.

Mayor Guerin received an appeal from the Automobile Club of Vancouver, B. C., to use his influence with others Mayors of Canada to work together so that a fine roadway could be constructed from Vancouver to Halifax. The scheme is outlined as follows: The Minister of Public Works in British Columbia, the Hon. Thos. Taylor, has started the building of the road from Vancouver through the mountains to the Province of Alberta. When this is accomplished it will be joined from the South by the Pacific Highway leading from Mexico to Vancouver. If the road is continued eastward it will attract tourists from all over the continent and instead of the millions of money that is spent annually touring Europe, some of this money will be able to be kept in Canada by having an attractive highway through scenery that cannot be surpassed in the world.

The new automobile taxes as adopted by the Quebec Legislature are as follows: For every motor vehicle used solely for commercial purposes, \$5; for other motor vehicles of 25 horsepower or less, \$5; of more than 25 horsepower and less than 35 horsepower, \$10; of 35 horsepower or more and less than 50 horsepower, \$15; of fifty horsepower and more, \$20.

The resolutions also provide that the fees from licenses and penalties shall be transmitted to the Department of Agriculture to be expended in improving the roads of the province.

The registration of every vehicle shall expire on the first of April each year and be renewable annually at the said date.

The provisions of the preceding resolutions shall not apply to a motor vehicle owned by a non-resident.

In the issue of February 2, on page 362 of THE AUTOMOBILE, it was said that the Model M Thomas motor had its valves changed from 21-8 to 25-16 inches. Later advices from the Thomas company state that "the Model M valves had always been 25-16 inches." In the same article it was said that the Model K motor remained unchanged. The latest advices in this connection are: "The fan, which has heretofore been gear driven, has now been changed to a belt drive."

## St. Louis Show

Is Proving a Marked Success, With Exhibits Valued at Over Half a Million

ST. LOUIS, MO., Feb. 20.—St. Louis demonstrated unmistakably the great public interest in an annual automobile show. This fact was disputed by the members of the St. Louis Dealers' and Manufacturers' Association, which after several ballots last Fall, decided to do away with the yearly exhibit.

It was only after this action of the association, which in previous years has been sponsor for the show, that F. W. Payne, manager of the Coliseum, called a number of the individual dealers together. After one meeting it was seen that there was sufficient sentiment in favor of a display to make its continuation not only possible but necessary.

The attendance was gratifyingly large, especially in view of the difficulties in organizing the exhibit.

An idea of the size of the St. Louis show may be gained from the statement that 115 pleasure cars were on display. The commercial car exhibits did not make such an excellent showing, but this is laid mainly to the fact that all of the space was early taken and there was no more to be had, premiums having been offered before the opening. The total value of the exhibits is placed at \$750,000.

The exhibitors are:

Kardel Motor Car Company—Reo, Falcar, Michigan and Gramm commercial.

J. I. Case Threshing Machine Company—Case cars.

Smith Auto and Battery Company—Ohio electrics.

Southern Automobile and Machinery Company—Ohio gasoline pleasure and commercial cars.

Rex Automobile Company—Auburn cars, Empire coupé and 1½-ton Atterbury truck.

St. Louis Stearns Automobile Company—Stearns pleasure cars and Stearns truck.

Priesmeyer-Stevens Auto Company—Waverly electric, model 78 Waverly truck, model 83 light delivery wagon and model 79 one-ton truck.

Pope-Hartford Car Company—Pope-Hartford.

Overland Motor Car Company—Overland.

Cook Motor Vehicle Company—Columbus electric, Krit gasoline and Firestone Columbus cars.

Beguelli-Buschart Motor Car Company—Selden cars.

White Garage—White pleasure cars and one 3-ton and one 3½-ton truck.

John Deere Plow Company—Jackson pleasure cars and two light delivery trucks.

The Kissel Kar Agency—Kissel pleasure cars and Kissel truck.

Grand Motor Car Company—Regal cars.

Whitman Motor Truck Company—Mercer, toy tonneau and Van roadster.

George C. Brinkman—Wilcox trucks.

Erving Auto Repair Company—Erving truck.

Lane-Lynch Motor Company—Owen and Marlon cars.

Victor Motor Car Company—Victor touring car and 1500-pound and 3-ton trucks.

Van Cleave Motor Car Company—Speedwell cars.

Gray Motor Car Company—Kline cars.

Charles F. Swartz—Velle cars.

Haynes Automobile Company—Haynes, Cole "30" and Page-De-troit cars.

Hall Automobile Company—Jackson pleasure cars and light delivery trucks.

Mound City Buggy Company—Halladay cars.

Corby Supply Company—Little Giant commercial truck, 1500-pound delivery wagon.

The Franklin Company—Dorian remountable rims and Gabriel automatic wind shield cleaner.

Girardin Stevens Company—Roberts motor, Loew Victor engine, Duplex horns, Delco ignition, Heissler storage battery, Fowler lamps and Rayfield carburetors.

Ilmo Motor Merchandise Company—Bricton detachable thread, Star wind shield, Kellogg electric tire pump, and Avery portable lamps.

Hudson Motor & Cycle Company—Yale motor cycle.

S. F. Bowser & Company—Accessories.

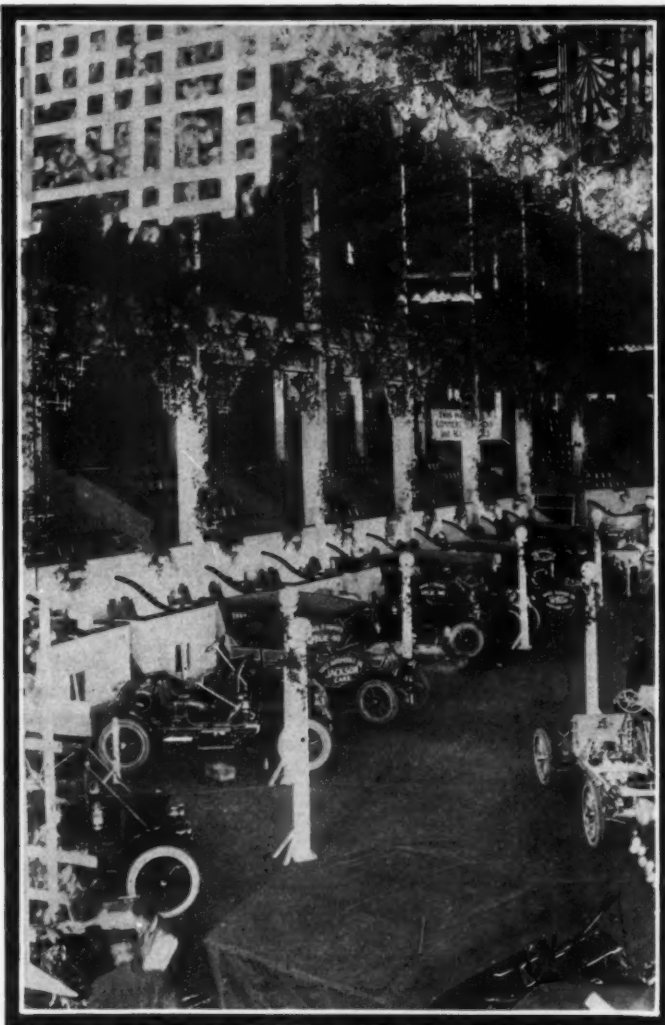
O. K. Harry Steel Company—Portable garages.

Displays are also made by the White Company of Chicago, Louis J. Bergdoll Motor Company of Philadelphia, Ideal Commercial Car Company of Detroit, and Conant & Donelson Company of Conway, Mass.

## Idaho Road Work Starts

TWIN FALLS, IDAHO, Feb. 20.—The first gun in the Idaho good roads campaign that promises to be far-reaching in extent was fired this week when the Twin Falls County Automobile Club made an initial appropriation of \$100 for the purpose of dragging a section of roadway near Twin Falls with a King road drag.

The annual election of officers of the Twin Falls County Automobile Club resulted as follows: President, George S. Aldrich; vice-president, L. A. Burson; secretary, Brick P. Kuhn; treas-



LOOKING AT THE LEFT SIDE OF THE COLISEUM, AND THE LINE-UP OF AUTOMOBILES RESTING UNDER DECORATIONS THAT GAVE THE TOUCH OF SPRING

urer, Fred C. Spencer. These, together with J. Benjamin Hall and C. E. Lind, comprise the board of governors for the ensuing year.

## Albany Chauffeurs to Dance

ALBANY, N. Y., Feb. 20—Albany Branch of the Chauffeurs' Protective Association, will give its first annual dance the evening of February 24. The association, which was formed recently, has for its objects fair legislation, education, opportunity for employment and fellowship. A large attendance is indicated by the flood of inquiries that have come to Joseph Flacke, secretary, and elaborate preparations are being planned for the affair.

## Canadians Look for Big Season

MONTREAL, Feb. 20.—The Wilson Bros. Motor Co., Ltd., has secured supplementary letters-patent changing its name to the Motor Import Company of Canada, Limited. The company have the sole agency in Canada for the Thomas and the territory from Montreal to the Atlantic for the Franklin and Hudson machines. They likewise represent the Brush runabout, Stoddard-Dayton and Knox cars, motor trucks and fire apparatus.

The prospects for a banner year as regards the sale of automobiles in Montreal are good, and the managers of the various companies interviewed upon the subject are sanguine that, good as 1910 was, the present year will easily surpass it.





LOOKING AT THE LEFT SIDE OF THE COLISEUM, AND THE SMILAX AND FERNS THAT WON THE ADMIRATION OF THE PASSING THROG

The Canadian Automobile Company has opened new quarters at 182 Peel street, and will handle a line of cars including the Pierce, Stearns, Cadillac and the E. M. F.

What the Government of the Province of Quebec is disposed to do for the improvement of rural roads in the Province of Quebec was made known this week in the House by the Hon. Mr. Caron, Minister of Agriculture. Increased subsidies will be granted to municipalities to the extent of \$175,000 for the making and maintenance of highways.

The Stockwell Motor Co. is handling the Maxwell, Reo, Velie, Oldsmobile, Peerless and Lozier cars.

P. Gadbois & Co. are exploiting the following cars: Hupmobile, Regal, Cole, Marmon, Glide, Westcott and Speedwell.

The Montreal Locomotive Works, Ltd., is featuring the Alco truck.

The Tudhope Carriage Co., of Orillia, Ont., manufacturers in Canada of the Everitt, has placed the sales managership in the hands of L. Logie, who for eight or ten years has been closely identified with the automobile trade in the United States.

### Another Tourists' Protective Body

BOSTON, Feb. 20—The International Automobile Association, incorporated under Massachusetts laws, has been launched. The enterprise, it is announced, will be a protective body to tourists. It is the object of the association to guard its members from exorbitant charges, but its method for doing so was not outlined in its announcement.

### Cleveland's Exhibition

Will Last But One Week, the Commercial Feature Having Been Abandoned

CLEVELAND, O., Feb. 20—Cleveland's Ninth Annual Show opened Saturday night in the Central Armory to a larger crowd of visitors than comfortably could be accommodated. The entire floor of the armory was filled with cars which overflowed into the balcony. The exhibition was promoted by the Cleveland Automobile Show Co., which was organized several months ago by a number of the city's motor car manufacturers and dealers. The show this year, as for the past several years, has been under the management of George Collier. It is said that the decorations and lighting effects represent an outlay of \$15,000, and the results certainly justify the expenditure. The general scheme is white lattice work on the side walls and balcony with red roses trailing over it. Two lattice-work rose trellises extend the length of the hall and are supported upon green and red art glass columns bearing incandescent lamps.

The show is distinctively a pleasure car exhibit, for not a commercial vehicle of any kind was shown by any of the forty-six exhibitors of motor cars. It was originally intended to follow the lead of Chicago and New York in devoting the second week of the show to commercial cars and no arrangements were made for them for the first of the week. It was later decided to close the exhibition at the end of the first week, and there will be, consequently, no exhibition of business cars at present.

### News Notes from Atlanta Field

ATLANTA, GA., Feb. 20—The Atlanta branch of the United States Motor Company has suffered a shake-up. J. M. Austin, who has been manager since the company established its first branch here, has resigned, as has John E. Kay, assistant manager. L. E. Klover, formerly of Philadelphia, has been named as manager, while Dan J. Ligon has been placed in charge of the sales department of the Columbia division.

The Atlanta Motor Car Company has taken over the automobile business of the Atlanta Buggy Company and will soon begin manufacturing a light truck. The name "White Star," used by the Atlanta Buggy Company for their pleasure vehicles, will be continued. F. L. Sawyer is in charge of the new company.

### New "Everitt" Agents Named

DETROIT, Feb. 20—Among the new "Everitt 30" agents appointed by the sales department of the Metzger Motor Car Company, of Detroit, are the following:

West Bergen Motor Car Company, Jersey City, N. J.; Joseph T. Curtiss & Company, Simsbury, Conn.; Portage Motor Car Company, Akron, Ohio; Troy Everitt 30 Company, Troy, N. Y.; Poppenburg Auto Company, Buffalo, N. Y.; C. D. Hershberger, Wilkes-Barre, Pa.; Everitt Motor Company, Omaha, Neb.; Cincinnati Auto Company, Cincinnati, Ohio; Ohnhaus Auto Company, Fort Wayne, Ind., and Gibson Auto Company, Indianapolis, Ind.

### King Car is Announced

DETROIT, Feb. 20—Another passenger automobile to be built in Detroit was learned of when the plans of the King Motor Car Company were given out. The car is designed by Charles B. King, formerly of the old Northern company, but now vice-president of the corporation that bears his name. The car has a four-cylinder motor, 3 13-16 by 5 1-8 inches, developing 35 horsepower. The claim is made that less than 400 parts are used in the completed car. Advanced models for 1912 will be ready late this Spring.

## Motor Enthusiasm Rife at Cincinnati Show



Edward F. Herschede, chairman of Executive Show Committee of Cincinnati Automobile Dealers' Association

CINCINNATI, O., Feb. 20 — Cincinnati's Fourth Annual Automobile Show opened to the public to-night amid settings of decorative grace, with class and eclat at Music Hall, Cincinnati's great show place, at eight o'clock with the unveiling of the prize Vanderbilt Cup, this formal act performed by Director of Public Safety Scott Small. Cincinnati turned out in social array demonstrating unmistakably the great public interest in an annual motor car show.

Every available space was taken, in fact many exhibitors could not be accommodated. When the doors opened to-night Music Hall's two great halls, were ablaze with thousands of electric lights, incandescent as well as arcs furnishing a glow of light that served to give the scene an effect equal to daylight.

A soft green carpet covered the floor of all spaces. Carloads of smilax from Georgia intermingled with flowers, ferns and other signs of Spring were used tastefully in the scheme of decoration. The most pretentious and restful of any that have ever been seen at a Central States show.

The show well represents the enterprise of the Cincinnati Automobile Association and its executive committee, Edward F. Herschede, president; R. C. Crowthers, treasurer; H. T. Boulden, secretary; H. S. Leyman, vice-president; W. G. Welbon, F. H. Miller, E. A. Kruse, directors; for they have labored strenuously with the co-operation of the national manufacturers,

and with the good will of the Automobile Club of Cincinnati, to place before the public an exposition worthy of the attention of the motorists and the probable motor car purchasers.

These men have been successful in bringing about a keen public interest in the show. Not only was the attendance gratifyingly large, but for the first time in the history of motor shows in Cincinnati society took an interest formally, only exhibited at ultra-fashionable events of national caste. To motor car enthusiasts to-night's turnout signified the passing of the horse-drawn vehicle in this section.

Many out of town dealers were present at the opening to-night, coming from Kentucky, Indiana and West Virginia, including many rural districts within a radius of 300 miles. It is believed 5,000 prospective purchasers from out of town, will inspect the exhibits during the week.

Forty exhibitors, occupying a floor space of over 50,000 feet representing 90 manufacturers, the total value of cars exhibited being over \$750,000. Besides a large and attractive display of accessories, shown by the leading firms of this city in this division, there is also a goodly display of motorcycles.

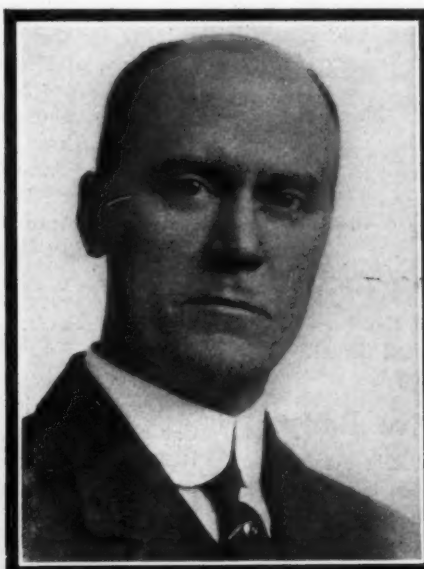
In the automobile section proper, there is displayed every class of machine known to the American market, ranging in price from the \$350 runabout, to the \$7,000 limousine. Nor will the commercial vehicle be missed by the visitor, for Cincinnati has advanced to a greater degree probably than any other city of its size in the United States in the manufacture of, and interest taken in, commercial vehicles.

Eight exhibits of commercial cars are seen upon the floor of the Cincinnati show and two exhibits of pleasure cars of Cincinnati manufacture are seen in this year's show. The feature of the show this year is the call for higher grade cars. Comparatively little interest is being taken in cheapness. The tendency of to-day as evidenced by the typical show attendant, is a demand for the automobile costing from \$2,000 to \$5,000. There is considerable favor shown for light deliveries and the present show at this city is somewhat weak in this respect, though the heavier trucks are very much in evidence.

Every incoming mail brings acceptances by hundreds of wealthy farmers of invitations to visit the show, from the district comprised in Northern Kentucky, Western Ohio and Eastern Indiana, no city in America being more favorably situated as regards its contingent of this class of citizenship. In



Harry T. Boulden, secretary

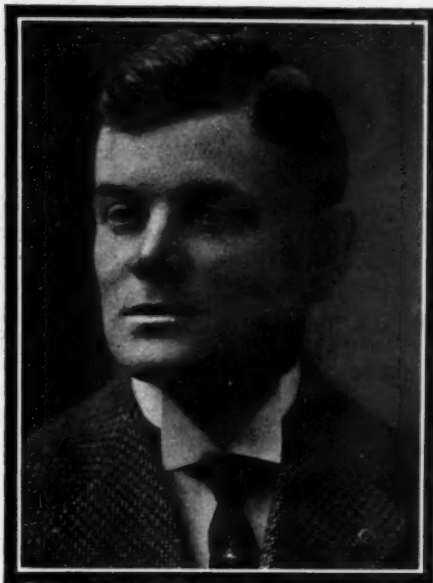


Robert C. Crowthers, treasurer



W. G. Welbon, director





H. S. Leyman, director



F. H. Miller, director



E. A. Kruse, director

every way the present Cincinnati show bids fair to show good results. The list of exhibitors includes:

The Herschede Motor Car Co., Stoddard-Dayton, Rauch & Lang electric cars and rapid motor trucks. The Leyman-Buick Co., Buick commercial and pleasure cars. The Citizens' Motor Car Co., Packard cars. The Olds-Oakland Motor Car Co., Oldsmobiles and Oaklands. The Hanauer Automobile Co., Pierce-Arrow and Corbin cars. Haber & Co., Cino pleasure and commercial cars. The Kruse Motor Car Co., Marmon cars. The Franklin Auto Co., Franklin pleasure cars and trucks. The Geo. C. Miller Sons Carriage Co., Stevens-Duryea, Mitchell and Regal cars. The Imperial Motor Car Co., Stearns, White and Hupp-Yeats electric cars. The Chas. C. Behlen Sons Co., Locomobile, Detroit Electric and Maxwell cars. The Jungel & Co., Baker electric, Overland and Palmer-Singer cars. The Ford Motor Car Co., Ford cars. The Chas. Schieffelin Motor Car Co., National, Inter-State and Hupmobile cars. The Cincinnati Automobile Co., Peerless, Pope-Hartford, Everitt Cars and Hewitt Trucks. The Cadillac Co., Cadillac cars. The Atlas Auto & Supply Co., Columbus electric, Jackson and Firestone cars. The Speedwell Motor Car Agency Co., Speedwell cars. The J. K. Gilchrist Motor Car Sales Co., Matheson and Republic cars. The Acme Automobile Co., E-M-F and Flanders cars. The Velle Motor Car Co., Velle cars. The Ohio Motor Car Co., Ohio cars. The Payne Motor Car Co., Thomas and Hudson cars. The Schacht Motor Car Co., Schacht cars. The Eddy Auto Co., Case cars. The J. H. Ratliff Auto Co., Chalmers cars. The Hughes Automobile Co., Krit cars. L. C. Dennison, Winton-Six cars. Robert C. Crowthers Automobile Co., Elmore. Coughlin-Davis Co., auto supplies. The Bumiller-Remellin Co., Indian motorcycles, auto, launch and aeroplane supplies. The Chas. H. Moore Oil Co., auto lubricating oils, greases, soaps. S. E. Bowser & Co., auto oils and tanks. Paragon Refining Co., lubricating oils and greases. Wayne Oil Tank & Pump Co., measuring pumps and tanks. J. E. Strater, Flint hydraulic shock preventor. Warner Pole and Top Co., auto tops.

### Hartford Opening Crowded

HARTFORD, CONN., Feb. 21—With a crowd present which taxed the capacity of the hall, with every inch of available space allotted to exhibitors and with more prospective buyers present than at any previous show, the fourth annual show of the Hartford Automobile Dealers' Association, which opened at Foot Guard Hall last night, promises to be one of the most successful in the history of auto shows in this city. The show continues all the week, closing next Saturday night.

The exhibitors were as follows:

J. T. Curtiss & Company—Velle 40, Hupmobile.  
A. W. Scoville—Stanley Steamer.  
Dunbar Motor Company—Elmore.  
Kaeser & Wilbur—Empire.  
Mythib Rubber Tire Preserving Company.  
New England Garage Company.  
Edward Harris—Overland.

Hartford Electric Lighting Company—Electric specialties.

F. H. Strong—Schacht.

Firestone Motor Car Company—Firestone.

E. P. Clark—Pumping and power plan.

G. Mills Harris—New York safety chest.

Hart Gas Light Igniter Company—Sundries.

Keystone grease and motor oil.

Brown, Thomson & Company—Lozier, Cadillac, Stevens-Duryea.

Capitol City Auto Company—Mitchell.

Miner Garage Company—Pierce-Arrow.

Russell P. Labor—Reo.

Palace Auto Station Co., Inc.—Thomas, E-M-F, Flanders and

Waverly electric.

R. D. & C. O. Britton—Maxwell, Columbia.

S. A. Foster & Company—Rambler, Regal.

Buick Garage Company—Buick and Winton.

Electric Auto Station Company—Baker electric.

Elmer Auto Company—Ford.

Carl H. Page Associates—Chalmers.

The Automobile Lighting Company—Sundries.

Compressed Gas Tank Company and Palace Auto Station Com-

pany.

Hartford Auto Boat & Supply Company—Auto supplies.

Baldwin Stewart Electric Company—Electric accessories.

Finch & Hayes—Flying Merkel and Thor motor cycles.

Post & Lester Company—Auto sundries.

Aetna Life Insurance Company—Auto insurance.

Smith-Worthington Company—Leather goods.

Travelers' Insurance Company—Auto insurance.

E. J. Todd Rubber Company and T. R. Shannon—Sundries.

Charles Miller Company—Auto supplies.

Autogenous Welding Company.



General view of the automobile show now in progress in the Music Hall, Cincinnati

## Stock Cars Sharply Defined in Rules of 1911

**A**UTOMOBILE contests during the coming season are to be conducted under different rules than they were last year and in preceding seasons. The certified and duly authenticated stock car is to be a commanding figure in competitions of all sorts and the whole effort for this year will be to maintain the definition of a stock car to the utmost degree.

The following extract from the 1911 contest rules formulated by the Contest Board, S. M. Butler, chairman, covers the stock car definition and the general classification heads. The chief change that has been made in the definition is to clarify it as will be seen below.

At present Chairman Edwards of the Technical Committee and Alden L. McMurtry are visiting all the factories in the country that are likely to take part in contest work of any description this year with the object in view of securing as many registrations as possible.

Under the 1911 rules the conditions under which a car may compete as a stock car are well defined and are calculated to increase the value of competitions to manufacturer, owner and prospective owner. One radical change that has been injected into the rules as far as promoters of competitions are concerned is one that requires the promoters to make a distinction on their programs and scoreboards between stock and non-stock events. Fully equipped stock cars may compete under price classification; stock chassis, stripped, may compete under piston displacement classes, and there may be special events for stock cars under class "E." Class "C," under which the Vanderbilt Cup and some other big road events are run, and the free-for-all class "D" must be designated as non-stock events.

The rules are as follows:

### Stock Car

*Stock Car*—A motor car which complies with each and all of the following requirements:

1. *Certificate of Description*—A complete description of the car upon the official blank provided for the purpose must be filed with the Technical Committee of the Contest Board at least thirty (30) days prior to the first contest in which the car shall compete.
2. *Registration Number*—No certificate or description of a stock car or chassis filed with the Contest Board shall be valid until the maker shall have received notification of its acceptance with the assignment of a registration number by the Contest Board. The fee for registration of each model shall be \$50.00 to M. C. A. members, and \$100.00 to non-members of the M. C. A.
3. *Car on Sale*—The car must be or have been on sale through all the regular selling representatives of the manufacturers during the period of its production.
4. *Manufacturers' Annual Output*—The manufacturer's annual output shall include his total production of all models excluding taxicabs, delivery wagons or other vehicles designed for commercial use.
5. *Quantity Production of Model*—The quantity production of any model must bear to the total annual output of its manufacturer the ratio set forth in the following table, based upon a period of time from July 1st to June 30th of the following year:

Total annual output, all models	Percentage of same model
10,000 cars or more.....	4.5 per cent.
8,000 cars to 9,999.....	5.0 " "
6,000 cars to 7,999.....	6.0 " "
4,000 cars to 5,999.....	7.0 " "
2,000 cars to 3,999.....	8.0 " "
1,000 cars to 1,999.....	9.0 " "
500 cars to 999.....	10.0 " "
250 cars to 499.....	16.7 " "
100 cars to 249.....	30.0 " "
50 cars to 99.....	50.0 " "

6. *Percentage of Output*—The required percentage of output

of any model shall in every case be in accordance with the table in Paragraph 5. Percentages are calculated on actual total annual output.

7. *Minimum of 25 Cars*—Whatever may be the number of cars of the same model necessary to constitute the percentage called for by the foregoing table in Paragraph 5, at least twenty-five (25) of such cars must have first been built before such model is entitled to a stock rating.

8. *Bodies on Same Chassis*—The use of different bodies—touring car, miniature tonneau, runabout, etc., upon the same chassis shall not constitute a difference of model under the meaning of this definition, but cars thus equipped must be entered in the respective classes to which the body equipment renders them eligible. Miniature tonneaus, surreys, double or single rumbles shall, for the purpose of these rules, be considered runabouts.

9. *Foreign-built Cars*—In determining the stock status of a foreign-built car, the total number of such cars imported into this country shall be taken instead of the total output of the foreign factory, and the number of any particular model necessary to constitute it a stock model shall be determined by the ratio set forth in the foregoing table in Paragraph 5; in other words, the intent of this rule is to place the importer of foreign cars on the same basis as the American manufacturer.

10. *Car Must Correspond to Registration*—The cars entered in any contest must absolutely correspond to the detailed description contained in the Certificate of Description; otherwise they shall not be permitted to start in the contest and entry fee paid shall be forfeited to the promoter.

### Stripped Stock Chassis

*Stripped Stock Chassis*—"A motor car chassis which, except for the options listed below, can, by adding the necessary parts, be assembled into a complete stock car." (See "Stock Car" definition.)

*Options Permitted*—Lighter springs (number of leaves optional, thickness, width and length must be standard).

Piston Diameters may be lessened (form of rings and number of oil grooves, etc., must be standard).

Angle of Steering Post.

Length and Angle of change gear, brake and other control levers (method of control must be standard).

Driving Gear ratio, *wheel diameters excepted*. (Where a gear ratio is changed on a shaft-driven car, any gear ratio may be used of which the standard axle construction will permit.)

Tire and Rim Equipment.

Length of clutch, brake, accelerator and other pedals.

Body Equipment: Contour of dash, seat and body optional, but floor boards must be carried. (See Dash Requirements.)

Form, Volume and Location of Fuel and Oil Tanks (system employed in either case must remain unchanged).

Exhaust header and exhaust pipe (optional, except exhaust must be conducted outside the bonnet and so directed as not to raise dust. See Rule 69).

Use of Shock Absorbers.

Winding of Springs only (winding of manifolds, fuel and water pipes or electrical connections must be standard).

Bonnets must be carried throughout a contest, but may be cut away at the side for the passage of exhaust pipes only. (See Rule 70.)

Bonnet straps must be added and approved by the Technical Committee.

Special Wheel Fenders or radiator protectors of any design may be used, *wind shields excepted*, provided they are attached to the car in a manner satisfactory to the Technical Committee.

*Note on Lubrication*—Where a reserve oil supply is provided,



a pipe connection with hand-pump may be employed to transfer the lubricant to the standard oil receptacle regularly supplied by the manufacturer with the car, but in no instance will it be permitted to connect a reserve oil supply directly with the parts to be lubricated unless such connection may be the standard lubrication equipment under the "stock" definition.

**Dash Requirements**—In a stripped stock chassis the contour of the dash outside of the limits of the bonnet is optional, but the dash arrangements within the limits of the bonnet contour must be in accordance with the regular stock model; standard stock car dash equipment must be carried thereon and it shall not be cut away for the passage of air or for access to the working parts of the motor in any way which does not conform to the regular stock model.

**Additional Parts to Chassis**—Dash, seat, body, tank or other permissible equipment shall be of substantial and safe construction within the approval of the Technical Committee of the Contest Board.

4. **Bona-Fide Status of Stock Car**—It is the intention of the rules relating to stock car and stock chassis competitions that such competitions shall be restricted to those cars identical in specification, materials and design with the manufacturer's product which is manufactured in quantity and is offered for sale and sold in a bona-fide manner to the public through the regular selling agencies of the manufacturer.

5. **Evasion of Stock Car Definition**—In the event of evasion on the part of entrants of the spirit of the "stock car" or "stock chassis" definition concerning points not definitely stated in these rules, the Contest Board shall have full power to render such decision as it may deem for the welfare of the sport and industry.

6. **Technical Committee of the Contest Board**—It shall be the duty of the Technical Committee of the Contest Board to pass upon, establish and certify to the Contest Board the stock status of all manufacturers' models offered for registration with the Contest Board as stock cars and stock chassis.

In any case where it may be necessary to establish the status of any car alleged to be a stock car under the definition contained in these rules, the Committee shall have the right to visit the factory of the manufacturer of such car, who shall be required to submit to the Committee such evidence as it may require to verify the allegation on which the "stock" status of the car is based.

The decision of the Technical Committee shall be final as regards the eligibility of any car to enter or start in any contest held under the Contest Rules of the A. A. A.

No car which the Technical Committee has ruled as ineligible shall be allowed to start in any contest, under protest or otherwise, and the decision of the Technical Committee thereon shall not be subject to appeal to the Contest Board.

The Technical Committee of the Contest Board shall serve as the Technical Committee for all National events; they shall, during the running of a speed contest, have general supervision and control of the pits and shall have the power to hold for repairs at the pits any car which they consider to be in an unsafe condition, but they shall report such fact to the Referee, who shall order the car held.

*No Class "A" or Class "B" events shall be run in any contest unless a member or representative of the Technical Committee is present.*

The Technical Committee of the Contest Board shall as far as possible have a representative present at every contest held under the A. A. A. sanction.

The Technical Committee shall also have power to take possession of any competing car either before or after the finish of any contest and make such examination thereof as may be necessary to establish its "stock" status.

### Classification

**Class "A."—Stock Cars—Price Classification**—7. **Competing Cars**—Open to any gasoline motor car (other than motor cars

with solid tires, wheels, 36 inches in diameter and over) which complies with the definition "stock car," this class to be run in the following divisions:

Division 1A.....	\$ 800 and under
Division 2A.....	801 to \$1,270
Division 3A.....	1,201 to 1,600
Division 4A.....	1,601 to 2,000
Division 5A.....	2,001 to 3,000
Division 6A.....	3,001 to 4,000
Division 7A.....	4,001 and over

Extra or optional equipment, listed in the manufacturer's catalogue as such, used upon a car competing under price classification, must have its list price added to the list price of the car, and this total price shall determine the classification of the car. No extra equipment shall be permitted other than that listed as such in the manufacturer's catalogue.

No car shall compete in any division above that to which its price entitles it.

**Class "B."—Stock Chassis—Minimum Weight and Piston Displacement Classification**—Open to any chassis of a gasoline car which is in accordance with the definition of a "stock chassis"; to be governed by the following table of piston displacement and minimum chassis weights:

Division	Piston displacement in cubic inches.....	Minimum weight in pounds
1B.....	160 and under.....	900
2B.....	161 to 230.....	1,200
3B.....	231 to 300.....	1,500
4B.....	301 to 450.....	1,870
5B.....	451 to 670.....	2,100
6B.....	601 to 750.....	2,400

No car shall compete in any division above that to which its weight entitles it.

No dead weight of any description shall be added to a car or attached thereto in any manner as ballast.

The use of any additional weight to bring a car into a class above that to which its weight entitles it will be considered an evasion of the rules.

**Class "C."—Non-Stock—Piston Displacement (only) Classification**—Open to any gasoline car or chassis made by a factory which has during the twelve months prior to the date of contest produced at least 50 motor cars (not necessarily of the same model). Eligible for entry under the piston displacement limitations of Class "B," but without minimum weight restrictions.

Division	Piston displacement in cubic inches
1C.....	160 and under
2C.....	161 to 230
3C.....	231 to 300
4C.....	301 to 450
5C.....	451 to 670
6C.....	601 to 750

No car shall compete in any division above that to which its piston displacement entitles it.

**Class "D."—Non-Stock—Free-for-All**—Open to any gasoline car which complies with the definition of a "motor car" without restriction as to piston displacement, weight, price or quantity produced. There may not be more than two events under Class "D" upon a day's program without special permission of the Contest Board.

**Class "E."—Special Events**—Special events other than those above specified held in connection with any motor car meet or contest, and approved by the Contest Board, of which there may not be more than three upon a day's program without special permission of the Contest Board.

**Class "F"**—Open to gasoline "stock cars" of the high-wheeled, solid tired buggy type, diameter of wheels 36 inches or over. Entries subject to price limitations of Class "A." There may not be more than two events under Class "F" upon a day's program without special permission of the Contest Board.

**Class "G"**—Open to electric "stock cars" only. Subject to the price limitations of Class "A."

**Class "H"**—Open to commercial cars, cabs and trucks. Division limitations to be obtained from the Contest Board.

8. **Match Races**—Matches may be held as contests of any kind covered by any of these rules and may be run under any of the classes or divisions.



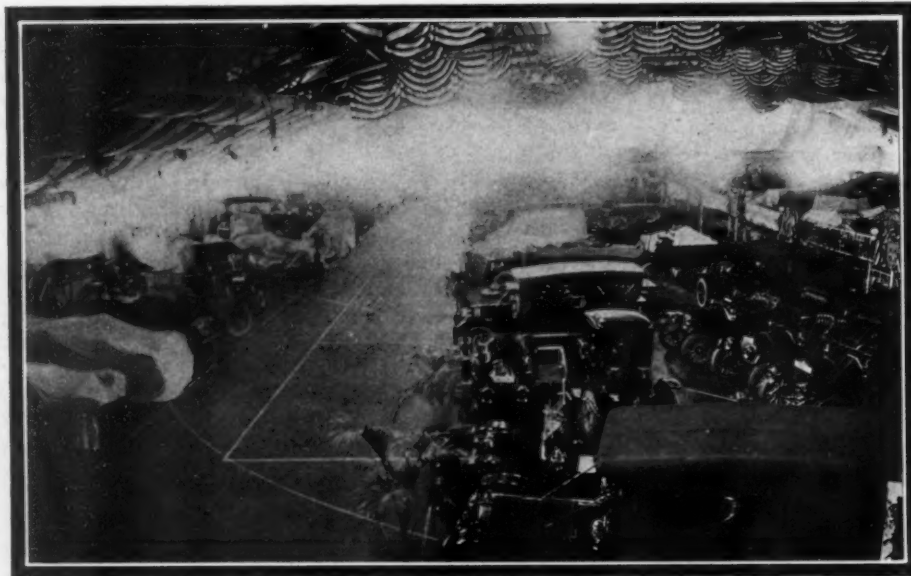
WHERE THE BALTIMORE AUTOMOBILE SHOW IS BEING HELD—FIFTH REGIMENT ARMORY

## Baltimore's Exhibition

Is the Greatest Show Ever  
Held in Monumental City

BALTIMORE, MD., Feb. 21—This is the biggest show that Baltimoreans have seen. Some idea of its vastness may be had by comparison of figures of this and last year. At the Armory there are altogether 61 exhibitors, 41 of whom are dealers while the other 20 are those showing accessories. The makes of cars shown are 60 and include a number of commercials. There are many new cars to be seen, while some of the old favorites which attracted attention last year are missing.

Among the newest things from a Baltimore standpoint this year may be mentioned the Welch-Detroit, Babcock, Regal, Lozier, Interstate, Simplex, Kissel-Kar, Paige-Detroit, S. G. V., Lord Baltimore, Abbott-Detroit, Krit, Franklin, Garford and Moon in the way of pleasure and touring vehicles and the Grabowsky, Rapid, Mack, Atterbury, Kelly, Frayer-Miller, Franklin, Sampson, White, Alco and Knox in the way of commercial cars.



General view of the exhibits in the State Armory at Albany, N. Y.

Thursday will be Society Night, when the admission price will be doubled. The exhibitors include:

### COMPLETE CARS

Stoddard-Dayton Automobile Company—Stoddard-Dayton.  
Lambert Automobile Company—Maxwell, National, Hudson and Sampson truck.  
Dixon C. Walker Automobile Company—E-M-F, Flanders, Garford, Studebaker and Grabowsky truck.  
Foss-Hughes Motor Car Company—Pierce-Arrow.  
Winton Motor Carriage Company—Winton.  
Calahan, Atkinson & Company—Locomobile.  
Cooper & Upton Company—Moon.  
Walter Scott—Crawford and Marmon.  
J. S. Ditch & Company—Kline.  
International Harvester Company—International.  
Motor Car Company—Stevens-Duryea and Overland.  
Auto Outing Co.—Haynes, Buick, Welch-Detroit and Rapid truck.  
Mar-Del Mobile Company—Packard.  
Franklin Auto Company—Franklin.  
Zell Motor Car Company—Chalmers-Detroit, Peerless and Hupmobile.  
White Automobile Company—White cars and trucks.  
Standard Motor Car Company—Cadillac.  
Ford Auto Company—Ford.  
Pullman-Shaffer Manufacturing Company—Pullman.  
Joseph J. Smith—Mack trucks.  
Carl Spoerers' Sons—Spoerer.  
F. W. Sandruck—Gaeth, Moline and Atterbury truck.  
Neely & Ensor—Alco.  
H. H. Babcock Company—Babcock.  
Mount Vernon Motor Car Company—Autocar and Regal.  
Little Joe Weisenfeld Company—Brush car and accessories.  
J. L. B. Willhide—Kelly and Frayer-Miller trucks.  
C. R. Mizner—Oldsmobile.  
Edwin Fleischmann—Lozier.  
Keller Auto Company—Inter-State.  
Quinby & Company—Simplex.  
W. B. Shuler—Mitchell.  
Griffins—Knox cars and trucks.  
Auto Company of Maryland—Kissel Kar.  
Madison Motor Car Company—Velle and Paige-Detroit.  
The Model Automobile Company—Everitt.  
Rice Brothers—S. G. V. and Rauch & Lang electric.  
Lord Baltimore Auto Company—Lord Baltimore.  
Abbott-Detroit Motor Car Company—Abbott-Detroit and Krit.

### ACCESSORIES, SUPPLIES, ETC.

Norwood Brothers.  
The Southern Auto & Marine Company.  
Howard A. French & Company.  
Auto Tire Preserver Company.  
Auto Supply Company.  
Baltimore Buggy Top Company.  
L. Sonneborn Sons, Inc.  
Hydraulic Oil Storage Company.  
H. W. Johns-Manville Company.  
Scott Demountable Rim Company.  
The R. Milton Norris Company.  
Charles Elliott & Company.  
Standard Oil Company.  
E. M. Denton.  
Automobile College.  
Peace & Peace.  
Thomas J. Gallagher.  
Club Garage.  
Maryland Motor Car Ins. Co.  
George R. Curtis.



## Albany Show

Includes 137 Cars,  
Representing 56  
Separate Factories

**A**LBANY, N. Y., Monday, Feb. 20—Showing 137 cars of 56 different makes, together with a good line of accessories, the second annual automobile show, under the auspices of the Albany Automobile Dealers' Association, was opened Saturday night to last for a week. There are 45 exhibitors and the show is being held in the State Armory.

G. W. Wait is showing seven cars from the Elmore plant.

The Trojan Garage shows six Stoddard-Daytons.

The Taylor Automobile Co. shows four Locomobiles.

J. A. P. Ketchum shows four Packard pleasure cars and one three-ton truck.

The Central Automobile Co. shows five Fords, a Paterson 30 and three Knox cars—one of the most complete exhibits in the show.

The United Motors Albany Co. shows five Maxwells, one Columbia and two Sampson trucks.

The Franklin Albany branch shows five Franklins.

W. L. Schupp & Son show Oaklands, Marions and Oldsmobiles.

The Albany Garage Co. shows two Peerless, one Simplex, one Palmer and Singer and a Peerless truck.

The Wright-Rye Motor Co. shows 5 overlands, two Whites, one Autocar truck and three types of Brush cars.

C. S. Ransom shows Hudson's, Stevens-Duryeas and Loziers.

G. H. Snyder is exhibiting two Velies, two Stearns and a seven-ton Commer truck.

The Eureka Motor Car Co. is showing one Only car.

Rayno Bros. & Reed show three Jacksons, a Marmon and a Coleman truck.

The Circle garage shows three Inter-State cars and chassis.

The Albany Rubber Tire Co. show the Selden line.

John Schmidt, a Nyberg 32.

V. A. Peters, a Paige-Detroit roadster.

Eastern Motor Sales Co., of Philadelphia, one Alpena flyer.

The Reo Sales Agency, two Reos and one Winton.



Giving an idea of the artistic arrangement of the exhibits at the Albany show

The Troy Automobile Exchange exhibits two Pierce Arrows and two Chalmers.

The Wilbur Auto Sales Co. shows one chassis and one fore-door Corbin touring car, one Regal and one Cole.

The Park Garage, three Hupmobiles, National and a Mitchell. James Goold Co., a Hart-Kraft truck.

The Albany Automobile Exchange, two Fiats from the American factory at Poughkeepsie, a Chadwick and a Pullman.

The Albany Motor Car Co., four Cadillacs, also a Thomas.

T. L. Davies & Co., a Gramm truck; Carhartt Sales Co., two Carhartts, and Fred V. Clute, three Pope-Hartfords.

In the accessory displays are to be found K. E. Bender, showing rectifying sets; The Mohawk Welding Co.; G. Feldman, Reading-Standard, Merkel and Minneapolis Motorcycles; The Century Repair Kit Co.; Kupkee's Automobile School Exhibit; Cantine & Rice, Insurance; M. Havens, Ward-Leonard charging system; Rose & Kiernan, insurance; James Goold Co., Mea Magnetos; Central Vulcanizing Works; Albany Hardware & Iron Co., accessories; Kirby Auto Supply, accessories; Steefel Bros., motoring apparel; John Kingsbury, wind shields and tops; Union Lubricating Co., oils; The Cox Brass Co., wind shields.



Gathering of Rambler salesmen at the factory at Kenosha, Wis., many of whom are from New York and other Eastern districts—it was a big day. The force includes (reading from left to right): Top row—H. B. Walz, H. P. Thompson, G. R. Sutherland, E. J. Wall, Gilbert Williams, A. R. Rockwell, Al. Reeke, W. G. Schultz, J. F. Hagen, J. A. Rose and C. H. Collins. Second row—W. H. Howe, C. O. Hart, M. B. Gilman, R. H. Gillies, H. W. Roppins, J. P. Zens, F. W. Perry, R. S. Bennett, L. A. Poundstone, J. M. Gaffney, F. J. Noetzel, L. P. Kilbourne, E. E. Stoddard, C. M. LeRoux, G. N. Bliss, E. A. Robbins, C. M. Halstead and E. S. Maddock. Bottom row—H. G. Musgrave, Geo. Norwood, I. R. Campbell, J. W. De Cue, G. H. Cox, E. S. Jordan, President Charles T. Jeffery, O. C. Hutchinson, L. R. Harvey, W. E. Dusenbury, G. R. Ruckert, W. S. Simmonds and M. E. Lebon.

## Seen in the Show Window

### HOW GRAY & DAVIS PROVIDE FOR ADJUSTMENT

REFERRING to the illustration AW of the Gray & Davis electric lamp for electric lighting work, the focusing attachment, fitted with an inside screw, is the feature. The adjustment nut at the top is for the purpose of shifting the direction of focus, and the illustration, being in section, clearly indicates how the adjustment works. This headlight is listed as Type A-5.

### AVERY ELECTROBOLA AND HOW IT WORKS

CONSTRUCTED in one piece, as the illustration AX shows, the "Electrobola," as made by the Avery Portable Lighting Company, is an electric lighting equipment comprising a ground parabolic reflector made from a die casting. The method of construction of this lamp is such that it gives excellence of lighting effect and it is conspicuous for its simplicity. The electric lamp is fitted to a suitably contrived opening through the back of the one-piece reflector member.

### EXAMPLE OF DIETZ ELECTRIC LIGHTING EQUIPMENT

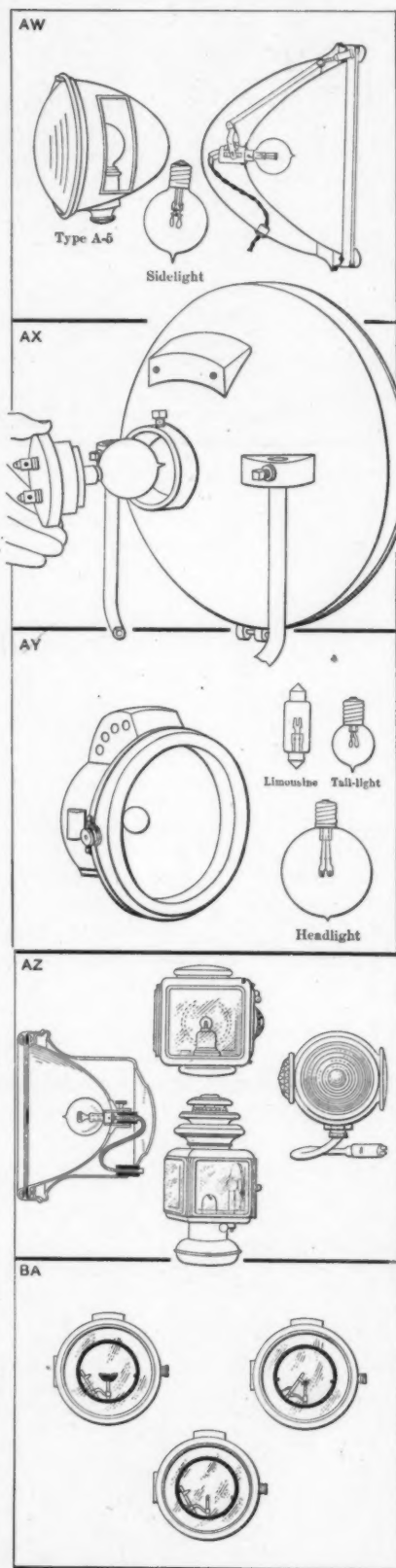
ILLUSTRATING methods of construction of the Dietz electric lamp work. Fig. AY shows the headlight, which is made in 6, 7 and 8 inch sizes. This equipment is designed to conform to the conventions, and the lamps are finished in gun metal, black, nickel, or polished and lacquered brass. The reflector is silver plated, of parabolic shape, and the electric bulb used is of the 6-volt size, giving 16 candle-power, as usually measured—i.e., mean spherical candles, so that when it is brought into use with the silvered reflector, the rays are so focused as to concentrate all of this light into a "beam" of great power and brilliancy.

### HANDY DEVICE FOR THE PUBLIC OR PRIVATE GARAGE OWNER

ONE of the most practical garage devices brought out lately is a pitless turntable for private or public garages.

The table is called the Pitless Auto Turntable and is manufactured and patented by a company of the same name in Kansas City who is just now establishing agents in the various motor centers and placing the turntable upon the market.

The table is what its name implies—Pitless—it consists of two 15-inch, 33-pound, channel-steel runways rotatably mounted upon 8-inch machine-faced wheels, eight in number, each wheel having two sets of annular ball bearings. The wheels travel upon a circular track made from standard 8-pound mine rail which is held true by means of six stray rods, attached to a center pivot plate, which lay flat upon the



AW—Showing details of the Gray & Davis electric lamp

AX—The "Electrobola" of the Avery Portable Lighting Co.

AY—Details of the Dietz electric lamp

AZ—Showing some of the Badger lamps

BA—How the Champion igniter works

floor. The height of the runways from the floor where the wheels are attached is one and one-half inches and the height of the approach in the portable type is one-half inch; in the stationary type the runway and the floor are level.

### SOLAR ELECTRIC LIGHTING EQUIPMENT

THIS year the Badger Brass Manufacturing Company, in addition to its regular line of equipment, is presenting a line of electric lamps to its patrons, some of which are illustrated in Fig. AZ. For those who so desire the innovation, the oil lamps are fitted with electric attachments rendering it feasible to use either the electric or the oil feature for side and tail lighting. In the same way headlights are so designed that they may be used for gas or electric work. The fittings are well contrived and the lamps maintain the general appearance of "Solar" equipment.

### GAS LAMPS MAY BE LIGHTED INSTANTLY

ONE of the great questions with lamps is to be able to light them at a moment's notice and to be able to accomplish the task with ease. The Champion Igniter Company presents a plan that is illustrated in Fig. BA, showing the gas lamp with the igniter device out of action at the bottom, then in the process of lighting at the right, and after the lamp is lighted at the left. All that has to be done to light the lamp is to pull a knob. This igniter is known as the "Koehler." It works on the induction coil plan, using current from the battery. The details of design and construction have been so nicely worked out that users regard this equipment favorably.

### A PRACTICAL NON-FREEZING SOLUTION

IN the selection of a non-freezing solution the automobilist is interested mainly in two things—first, the action of the solution upon the circulating system; and, secondly, upon the ability of the solution to withstand high and low temperatures.

Such claims are made for Pyro-alcohol (denatured), which is manufactured by the U. S. Industrial Alcohol Company, 100 William street, New York. It is the ordinary alcohol of commerce which has been made unfit for use as a beverage. It has absolutely no corrosive action on any of the metals with which it comes in contact, and its ability to withstand cold is indicated by the fact that a 30 per cent. solution (1 1-2 quarts of the alcohol added to 1 gallon of water) freezes at about 5 degrees below zero. It contains no solid matter, thus making it unnecessary to filter before using and eliminating all danger of its clogging the radiator.